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Original Articles.

MOVABLE KIDNEY—ITS CAUSE AND TREATMENT.*

M. L. HARRIS, M.D.

PROFESSOR OF SURGERY, CHICAGO POLICLINIC.

CHICAGO.

The kidneys are usually classed as fixed organs. They, however, are not fixed but possess normally quite a range of motion. This varies from 2 to 4 cms. in a longitudinal direction and corresponds to the rise and fall of the diaphragm during respiration. As a rule the normal kidney can not be palpated through the intact body walls in men, but in women the right can be distinctly felt in a majority of the cases and the left in a smaller proportion. A kidney may often be easily palpated by one with much practice when another with less experience would fail to perceive it.

In palpating a kidney the patient, with all clothing about the body removed, should lie on the side opposite the organ sought with the head and shoulders slightly higher than the hips and the thighs gently flexed. Standing at the back of the patient the fingers of one hand are firmly pressed against the abdominal wall just below the costal arch and to the outer side of the rectus muscle while, with the fingers of the opposite hand, firm counter-pressure is made against the small triangular space just below the 12th rib behind. The patient should take a deep breath during the somewhat rapid exhalation of which, the kidney, if palpable, may be grasped between the two hands. This lateral position has been found preferable as a rule to the standing position for the reason that many patients, even with the body bent forward and the weight resting on a table, are unable to relax the abdominal muscles as completely as when lying on the side. It is often possible to palpate a kidney in the lateral position which could not be felt with the patient lying on the back.

For the sake of clearness, it is necessary to define what is meant by a palpable and movable kidney. In almost every individual not possessed of more than the average amount of subcutaneous fat the kidney may be felt in the sense that, with one hand firmly pressed in the triangular space below the 12th rib behind while deep pressure with the other hand is made in front and the patient takes a deep breath, an indistinct mass will be felt to impinge against and recede from the hand placed posteriorly. Such a kidney, however, is not said to be palpable. Only when a portion of the kidney can be distinctly grasped and outlined between the two hands is it said to be palpable. One-third, one-half or two-thirds of the kidney may thus be palpated. In case more than one-half the organ can be outlined and it can be caused to recede out of reach during exhalation, it is said to be movable to the first degree. In case both hands can be brought together above the organ, it is movable to the second degree, and if it can be depressed to the pelvic brim or moved to or beyond the midline, it is movable to the third degree.

This classification is, of course, arbitrary but of value in facilitating clearness of description. The great frequency of movable kidney in women has only recently been realized owing to a more systematic examination of patients with this point in view. Küster[1] found that 1.41 per cent of the women in his general surgical practice had movable kidneys, while Edebohls in an exclusively gynecologic practice estimates that 20 per cent. are thus afflicted. As will be seen from the subjoined table, both of these figures are very much too low, as my figures show that 56 per cent. of the women had distinctly movable kidneys on one or both sides. What are the causes of this large percentage of movable kidneys in women? The etiologic factors usually mentioned are the following: 1. Repeated pregnancies which are supposed to act by producing a relaxation of the anterior abdominal walls, thus diminishing the abdominal pressure against the kidneys, as well as by the enlarged uterus directly displacing these organs. 2. Prolapse of the uterus and vagina with lacerations of the perineum by contributing to the reduction of intra-abdominal tension. 3. Retrodisplacements of the uterus by drawing on the ureters. 4. The rapid absorption of the perirenal fat as may occur in acute wasting diseases. 5. Drawing on the kidneys by the transverse mesocolon in enteroptosis of Glenard's disease. 6. The relaxation of the abdominal walls which follows the removal of intra-abdominal tumors or ascitic accumulations.

That these factors have very little or no influence in giving rise to movable kidneys will be clearly shown.

The fallacy of supposing that pregnancy, lacerations of the perineum, displacements of the uterus, etc., are instrumental in causing movable kidneys is unanswerably shown by the fact that over 40 per cent. of the cases of movable kidneys were found in unmarried women, in women who have thus never been pregnant, who have intact perineal floors and whose uteri are in normal position. That these factors may, and perhaps, at times do, aggravate the condition caused by other influences is admitted.

The fallacy of the theory of the absorption of the perirenal fat has been shown by Heller, and of the traction theory by Ewald. The influence of traumata both internal and external will be considered later. What then is the fundamental cause of movable kidney? This is found in the relation which exists between the location of the kidney and the body form.

The exhaustive work of Wolkow and Delitzin renders it unnecessary to enter into a study of the location of

* Read at the annual meeting of the American Surgical Association, held at Baltimore, Md., May 7-9, 1901.

1. Deutsch. Chir. Lief., B. III.

the kidney as found in the dead-house. Conclusions, however, based entirely on dead-house findings are erroneous for the reasons that when the body is in the recumbent position the kidney assumes its highest or most cephalad location; that this location is moved still further cephalad by the final contraction of the chest at death and last because the kidney loses much of its mobility owing to the postmortem solidification of the perirenal fat.

These studies are, therefore, based upon observations made on the living subject in the examining room and on the operating table. While systematically examining patients in Litten's clinic Becker and Lenhoff[2] became convinced that they were able to predict from the general appearance of the body form of a woman whether the kidneys would be found palpable or not. In order to reduce this conviction to some tangible shape a series of measurements of the women examined was made which eventuated in what they termed the index of the body form. This index was obtained by dividing the distance from the suprasternal notch to the upper edge of the symphysis pubis by the least circumference of the abdomen and multiplying it by 100. They found that in women with high index the kidney was usually palpable, while in those with low index it was not palpable. The average index was 77.

They therefore divided the patients into positive or those with an index above 77, in whom the kidney could be felt, and negative or those whose index was below 75, and whose kidneys could not be felt. Before the appearance of Becker and Lenhoff's article I had made some observations on the body form in its relation to the kidney which were inspired by Küster's article in 1895, on the cause of subcutaneous lactrations of the kidney and of movable kidney.[3] Küster's observations I was able to confirm many times during my courses on operative surgery on the cadaver as well as by observations on the living subject. I then began a more systematic study of movable kidneys and the location of the kidney in its relations to the body form or rather the influence of the body form on the location of the kidney.

In this study certain measurements of the body were taken together with certain other data, which were supposed might have a bearing on the subject. It was soon found that the measurements taken by Becker and Lenhoff, namely the jugulo-symphysis and the least abdominal circumference, were not sufficient to give one a correct idea of the body form nor did these measurements offer, in any way, an explanation of the fact that in certain cases the kidney would be found palpable while in other cases it could not be felt. Numerous exceptions to their rule, as shown by themselves, also indicated that there were other factors which should be taken into consideration. In order to determine what those other factors were additional measurements of the body were taken, together with the following data: Sex; age; married or single; number of children; weight; height; condition of the 10th rib; accidents, such as severe falls or injuries to the body, and the condition of the pelvic organs and perineum.

For the purposes of this study the body cavity may be subdivided into three portions or zones, the upper of which contain chiefly the lungs and heart; the middle zone the liver, stomach, spleen, pancreas, and major portion of each kidney, while the lower zone contains the intestinal canal and a minor portion of each kidney. The true pelvis may be disregarded. A transverse plane passing through the body at the lower end of the sternum proper, not the xiphoid appendix, forms the lower boundary of the upper zone, and a similar plane, which cuts the lowermost point of the 10th ribs, forms the lower boundary of the middle zone. While the plane forming the boundary between the upper and middle zones does not, of course, accurately separate the chest from the abdomen, it may be taken as such for practical purposes and has been found to be of great importance in determining the body form and in estimating the capacity of the middle zone, as will be shown in the table of measurements.

After measuring the least abdominal circumference in a number of individuals it was found that this plane was not fixed in regard to its location; thus, in women, while it usually cuts the 10th ribs, it often passes below this point and occasionally was as high as the 9th rib; in children it usually passes entirely below the ribs, often as much as 1 cm., and in men it usually passes just below the tips of the 11th and 12th ribs. It, therefore, soon became evident that this measurement should be taken at some fixed point in order to obtain reliable comparative results. As the middle zone includes that portion of the body cavity which is partially enclosed by the lower ribs, its lower boundary should correspond with the lowest point of these ribs. The 10th rib is the one which forms the lowest point laterally and in measuring the circumference of the body at this point, the tape should always rest on the lower edge of the 10th rib at its lowest part, instead of measuring the least abdominal circumference without regard to its location.

In taking these measurements the patient should lie flat on the back. If the shoulders are raised any it is very easy to shorten the jugulo-symphysis distance 1 to 3 cms., owing to the forward curve of the body. The circumference of the body at the 10th rib is first taken, and the point where this line crosses the midline is marked with a pencil. The lower end of the sternum or apex of the costal arch is marked and the circumference of the body at this point measured. The breasts should be drawn upward so as not to include the lower part of them in the measurements. Both of these measurements should be taken at the end of expiration during ordinary respiration. The jugulo-symphysis is the distance from the upper end of the sternum or suprasternal arch to the upper border of the symphysis pubis. In taking this measurement the length of each zone, upper, middle and lower should also be separately recorded. By dividing the jugulo-symphysis by the circumference at the 10th rib an "index" was obtained which in the table is marked "Index No. 1."

In measuring the circumference in the manner just mentioned several sources of error were observed which vitiated somewhat the results and occasionally made them appear contradictory. Thus it was found in measuring the abdominal circumference that the deposit of fat which rounds out the female form about the hips was occasionally so great that the circumference was increased out of proportion to the inner capacity. The same effect was produced by the muscles of the loin in some women in whom marked constriction of the lower ribs is present. The measure is increased if taken when the stomach is full or distended.

In women with a lax or pendulous abdomen with visceral ptosis the lower ribs spread considerably when the patient is lying down and the circumference of this

2. Deutsch. Med. Woch., 1898, xxiv, S. 508.
3. Arch. f. Klin. Chir., 1895, No. 50, S. 676.

increased from 2 to 5 cms. over the same when standing. In a well built person with firm muscles the circumference when lying differs little or not at all from the same when standing. In case the breasts are quite large, even when drawn up as much as possible, the circumference of the body at the lower end of the sternum is increased out of proportion to the inner capacity.

As the object of the measurements is to form therefrom an idea of the relative capacity of the middle zone of the body, it may be readily seen that in the cases just mentioned an erroneous conclusion may be drawn. Some method of measuring was therefore sought which would eliminate these errors. This was found in the use of a graduated calipers. By means of the calipers certain diameters of the body could be measured opposite fixed points which are less influenced by varying amounts of adipose tissue and other conditions of the body. The measurements taken with the calipers are five in number namely:

No. 1. Lateral diameter of the body on a plane corresponding with the lower end of the sternum. This plane at its widest lateral diameter usually cuts the 7th rib and the ends of the calipers are therefore pressed against these ribs and the widest diameter recorded. This measurement is called the upper lateral diameter.

No. 2. Is the middle lateral diameter and is the greatest distance between the lower edge of the 10th ribs. Care should be taken to place the ends of the calipers against the lower portion of the 10th ribs and avoid the muscular folds often present in this region.

No. 3. The lower lateral diameter is the widest distance between the crests of the ilia.

No. 4. The upper antero-posterior diameter extends from the lower end of the sternum to the spinous process directly opposite and in the same plane as the upper lateral diameter.

No. 5. The middle antero-posterior diameter extends from the midline in front to the spinous process opposite and in the same plane as the middle lateral diameter.

These measurements should be taken with the patient standing.

The cases in which these last measurements were taken in women are placed by themselves and labeled "Second Series." These five measurements present a formula which may be said to represent each a particular body form. By dividing the middle lateral diameter by the upper lateral and multiplying by 100 is obtained what is called "Index No. 2." By a careful consideration of these tables it is found that many important and interesting conclusions may be deduced therefrom.

As women are the most frequent sufferers from movable kidney they will be considered first. The cases are arranged in order, based on "Index No. 1," beginning with the lowest index and ascending to the highest. In the "Second Series" the same order is maintained, and next to "Index No. 1" is placed "Index No. 2." The indices are simply attempts to reduce to single figures the relations between certain of the body measurements, and thus represent at a glance the body form.

"Index No. 1" shows the relation which exists between the length of the body cavity and its circumference at the lower edge of the 10th rib; "Index No. 2" refers entirely to the middle zone of the body, and shows the relation which exists between the lateral diameter of the lower end of this zone and that of the upper end or, in other words, the amount of constriction or diminution of the capacity of the lower end as compared with the upper.

It will be observed that the column marked "Index No. 1," is arranged in ascending order and that the location or condition of the kidneys, as noted in the proper columns, is found to be "negative" or not palpable until the index reaches 77 to 78. In those cases in which the index is above this point either one or both kidneys are found to be palpable or movable to a greater or less degree. The exceptions to this rule will be noted later. If all cases be divided into "negative" and "positive," there will be found among the women 55 negative and 71 positive.

That all cases with a low index are uniformly negative and those with a high index uniformly positive can not be due to chance. An explanation of this fact will be found in a study of the other measurements given in the table. Weight is found to favor the negative cases, their average weight being 58.7 kgs., while that of the positives is 54.5 kgs. In height the positives exceed the negatives by 2.4 cms., their average heights being respectively 160.4 cms., and 162.8 cms. Of this increase in height one-half, or 1.2 cms., lies in the length of the body or jugulo-symphysis, and the remainder in the extremities. Average jugulo-symphysis 50.82 negative and 52.03 positive.

The interesting point in this connection is the distribution of this 1.2 cms. in the different zones of the body. The average length of the different zones are, upper zone 14.55 cms. for the negative and 14.58 cms. for the positive; middle zone 14 cms. negative and 15.1 cms. positive; lower zone 22.27 cms. negative and 22.33 cms. positive;. It will thus be seen that the lengths of the upper and lower zones remain about the same in the two classes of cases, while practically the entire increase in the length of the jugulo-symphysis in the positive cases over the negative is found to lie in the middle zone.

If we now consider the average circumference of the middle zone at its upper and lower portion we find this to measure 77.1 cms. for the upper and 69.5 cms. for the lower in the negative cases. and 73.46 cms. for the upper and 61.9 cms. for the lower in the positive cases. This is a difference of 7.6 cms., or 9.8 per cent., in the negatives, and 11.56 cms., or 15.7 per cent. in the positives. This shows that there is a marked increased contraction or diminution in size of the lower portion of the middle zone in the positive cases over that in the negative. This will be still better shown when we consider the diameters taken with the calipers.

If the middle zone were a true conic section with a greater and smaller circumference, as above given. the middle zone in the positive cases would contain nearly 800 c.cs., or 13.2 per cent., less than the same in the negative cases. This would be equivalent to the space occupied by both kidneys and the spleen. Of course, in this estimate no allowance has been made for the thickness of the body wall, nor for the marked difference between the configuration of this section of the body cavity and the external surface. It simply demonstrates that there is a marked contraction of this space in the positive cases as compared with the negative. As already pointed out, certain slight errors may occur in measuring circumferences which are practically eliminated by measuring the diameters with graduated calipers.

If we consider now these diameters, we find that in the negative cases the average upper lateral diameter is 23.62 cms.; average middle lateral diameter 20.2 cms.; average lower lateral diameter 28.7 cms.; average

upper antero-posterior diameter 16.9 cms.; average middle antero-posterior diameter 15.67 cms. In the positive cases the average corresponding diameters are:

Upper lateral	23.85 cms.
Middle lateral	17.44 cms.
Lower lateral	29.06 cms.
Upper antero-posterior	17.03 cms.
Middle antero-posterior	14.26 cms.

The difference between the upper lateral and the middle lateral in the negatives is 3.42 cms., or 14.4 per cent., and the difference between the upper antero-posterior and middle antero-posterior is 1.23 cms., or 7.28 per cent., while the difference between the upper and middle laterals in the positives is 6.41 cms., or 27 per cent., and between the upper and middle antero-posterior 3.04 cms., or 17.5 per cent. This shows that the middle zone diminishes in size from above downward nearly 100 per cent. more from side to side and 140 per cent. more from before backward in the positive cases than it does in the negative.

If we compare corresponding diameters in the two classes of cases, we find that the upper laterals are practically the same, while the positive middle lateral is 2.76 cms., or 13.6 per cent., smaller than the negative. In the upper antero-posterior there is a slight increase, 2.3 per cent., in favor of the positive and in the middle antero-posterior a diminution of 1.41 cms., or 9 per cent., in favor of the positive. If we figure the area of the lower end of the middle zone we find that it is 21 per cent. smaller in the positive cases than it is in the negative. This diminution in size is equivalent to displacing downward the contents of this space 2.6 cms. at its lower end.

It will thus be seen that these measurements, however figured, demonstrate beyond dispute that in those cases in which we find movable kidneys there is a marked diminution in the capacity of the middle zone in which the major portion of the kidney should lie, and that this diminution increases in ratio from above downward.

As the chief and characteristic peculiarity of these cases lies in the marked difference in size between the upper and lower ends of the middle zone the ratio which one bears to the other may be used as an index to express the particular body form. The ratio of the areas would be more correct. However, as it requires considerable figuring to determine this, it has been found much simpler to use the ratio of the middle lateral diameter to that of the upper lateral. It corresponds very closely to the ratio of the areas, and is determined by dividing the middle lateral by the upper lateral diameter and multiplying by 100. This constitutes what I have called "Index No. 2," and is more reliable than "Index No. 1." The average index No. 2 for the negative cases is 85.26, and for the positive 73.23.

In consulting the tables, we find that all cases with an index above 81.8 are negative and all below this number are positive. We find in the table two cases, Nos. 100 and 121, with the same index, namely 81.8, one ofwhich is positive and the other negative. In looking at the antero-posterior diameters, however, we find a contraction of from 18 to 14, or 22 per cent., in the positive, and only from 17 to 16, or 6 per cent. in the negative, which explains the difference very nicely. Had the areas been used instead of simply the lateral diameters the indices would not have been the same. These two cases also illustrate the fact that while the index represents briefly, and in a general way the body form, it does not take into consideration all the points and is, therefore, not entirely reliable. If all the measurements be considered, and particularly the five taken with the calipers, a formula will be obtained which represents accurately the body form.

Case No. 98 shows an error which may arise in measuring the circumference and relying on index No. 1. In this case the deposit of fat above the hips was very marked and the circumference correspondingly large. This gave a low index No. 1, namely, 73.7, which should indicate a negative case. The right kidney, however, was very easily found and freely movable to the second degree. If we consider the diameters as taken by the calipers, which eliminate the error of fat, we find the middle zone contracted from 28 cms. above to 20 below, a difference of nearly 28 per cent., and explains at once the cause of the movable kidney. Other apparent exceptions are thus readily explained when all the measurements are taken into consideration.

In what manner does a diminution of the capacity of the middle zone bring about a movable kidney? As already shown, the upper zone remains on the average practically the same in the two classes of cases. Any lessening of the capacity of the middle zone must, therefore, result in a displacement of the contents of this space downward. The liver is affected first and as it is depressed its posterior border acts immediately upon the right kidney, tending to displace its superior pole forward or to depress the entire organ. The presence of the liver explains the great predominance of involvement of the right kidney. The left kidney is not only somewhat more firmly fixed, but has pressing upon it only the small spleen and the soft yielding stomach. Although this depression of the kidney is always present as the principal determining cause, it is not the entire cause of movable kidney. The kidney is so far depressed that the constricted and narrow outlet, as it may be called, of the middle zone is above the center of the organ, so that every movement or action of the body which tends to still further contract this outlet by adducting the lower ribs, produces pressure on the upper portion of the kidney and constantly tends to press it downward. The amount or degree of mobility depends therefore not alone on the amount of constriction of the middle zone, but on the many conditions such as heavy lifting, hard work, straining, coughing, flexions of the body, etc., which act more or less continuously by pressing the organ downward.

These various influences, which are quite numerous and so well understood that they need not be further detailed, may be summed up under the term "internal traumata." As they may vary considerably in different individuals they offer a ready explanation of the fact that different degrees of mobility may be present in individuals of practically the same body form.

It may be well now to analyze our table of women as to the etiologic influence of other factors. Measurements were made of 126 women. No attempt was made to select these cases except excessively fleshy women in whom nothing within the abdomen can be distinguished were excluded. They were examined as the occasion presented itself regardless of whether symptoms were complained of or not.

Of the 126 women 71, or a little over 56 per cent., were found to have distinctly palpable or movable kidneys. Of the 71 cases, in 35, or 50 per cent., the left kidney was also palpable or movable but seldom to the same degree as the right. In only one case was the left alone movable, and in this case, although

the abdomen was very lax and easily palpable, no evidence of a right kidney could anywhere be felt. Of the cases 81 were married and 43 single; 2 not stated. Of the 81 married women, 41, or 50 per cent., and of the 43 single women, 28, or 65 per cent., had movable kidneys. Concerning the number of children born, the negative cases show that

6 had	0 children	0 children.
4 had	1 child	4 children.
3 had	2 children	6 children.
3 had	3 children	9 children.
3 had	4 children	12 children.
4 had	5 children	20 children.
1 had	8 children	8 children.
1 had	11 children	11 children.
25 women had		70 children.

or an average of 2.8 children to each woman. In 12 cases the number of children was not known. Of the positive cases:

6 had	0 children	0 children.
2 had	1 child	2 children.
10 had	2 children	20 children.
4 had	3 children	12 children.
4 had	4 children	16 children.
2 had	6 children	12 children.
1 had	7 children	7 children.
1 had	10 children	10 children.
30 women had		79 children.

or an average of 2.6 children to each woman. In 12 cases the number of children was not known.

These facts point to the conclusion that child-bearing does not produce movable kidney and has no influence in that direction in the absence of that particular body form. That repeated pregnancies, by producing relaxation of the abdominal walls and deterioration of the general health, may induce symptoms or aggravate those already present is very probable and will be admitted. The same may be said concerning lacerations of the perineum and displacements of the uterus. In three of the negative cases complete procidentia was present. In one of the positive cases there was complete procidentia, and in one prolapsus with rectocele and vesicocele.

A most important question in this connection is the possibility of producing a movable kidney by external violence, such as a fall or a blow or injury in the region of the kidney. The importance of this question from a medicolegal standpoint makes it necessary to enter into it somewhat in detail. It is usually stated in textbooks, and it is a common belief, that movable kidneys are frequently the result of an injury. This is but another of the numerous post hoc propter hoc errors. An individual falls or meets with an accident in which the body is bruised or injured in some manner and an examination sometime thereafter reveals the presence of a movable kidney. It is immediately concluded that the accident bears a causal relation to the movable kidney without stopping to consider whether the movable kidney may not have been present long before the accident and in no manner influenced thereby. Several facts have contributed in giving origin to this belief.

1. The fact may be mentioned that the large majority of physicians are still unfamiliar with the great frequency of movable kidney in women. A physician of considerable experience recently stated it was a very rare condition and in all of his experience he had seen but four cases.

2. In many cases movable kidney gives rise to no appreciable symptoms, and in a large majority of those in whom distinct symptoms are undoubtedly due to the movable kidney the patients themselves are unaware of the cause of their symptoms and often, unfortunately, the attending physician as well.

3. There is no means of determining how long a kidney has been movable.

For the same reasons many writers on this subject have over-estimated the causal influence of trauma. Most of the cases recorded as due to trauma will not stand criticism. Sulzer,[4] in regard to this relation, says: "However, one will have to be very careful in judging of these relations for, on the one hand, we know from other diseases how readily people in general refer their troubles to a particular injury and, on the other hand, we shall see later, that upon the occasion of a fall or exertion, etc., a movable kidney which is already present may suddenly present severe so-called strangulation symptoms and thus becomes first known to the patient or physician after it has existed without symptoms for months or years." After considering the anatomic fact of the looseness of the peritoneum covering a movable kidney, he says: "The acute origin of a movable kidney, if it occur at all, is, then, only possible when owing to a congenital or acquired looseness of the peritoneum the disposition to the trouble already exists." He further states: "The question whether an acute traumatic origin of a movable kidney be possible may be very important in a medicolegal relation or in insurance business and I believe that without the acceptance of a particular abnormal body condition a movable kidney can never be the immediate result of a trauma." Sulzer arrived at these conclusions after a study of the cases in which a movable kidney was supposed to have resulted from an accident, and owing to the fact that the peritoneum which covers the kidney in front and aids in holding it in place is very much relaxed in movable kidney and this relaxation or pouching is so great that it can not be produced suddenly any more than a large hernial sac can be produced suddenly. Keller[5] is also of the opinion that this condition can not be produced suddenly, but requires a considerable time for its development and, therefore, a kidney with a distinct range of motion discovered immediately or soon after the receipt of an injury must have been movable before and its mobility can not thus have been caused by the injury.

Concerning the traumatic origin of movable kidney, Büdinger[6] says: "When the kidney is fixed they (traumata) are able to produce only the first step, while the formation of the typical movable kidney requires still other conditions. A sudden marked dislocation presupposes an extensive loosening of the kidney, and not only that, but a space below the kidney with a considerable change in the relations of the peritoneum."

Güterbock (quoted by Büdinger) concludes from a study of injuries to the kidney, "that a typical movable kidney does not occur as a result of trauma, but only a loosening of the organ which later may lead to mobilization unless the kidney becomes fixed by adhesions. But even if one disregards the demand that a traumatic movable kidney must show relations analogous to the anatomic findings of the classical movable kidney, the number of such cases is very small in which, in the living subject, a connection between the injury and the mobility with certainty can be demonstrated. The pain

4. Deutsche Zeit. f. Chir., 1891, B. xxxi, S. 506.
5. Deutsch. Chir., Lief. 67.
6. Mittheil. aus d. Grenzgebiet., 1898-9, No. 4, S. 265.

Number.	Females.	Age.	Married or single.	No. of children.	Weight.	Height.	Circumference at lower end of sternum.	Circumference at lower edge of 10th rib.	Jugulo-symphysis.	Length of upper zone.	Length middle zone.	Length of lower zone.	Lateral diameter, upper.	Lateral diameter, middle.	Lateral diameter, lower.	Anterior-post. diam., upper	Anterior-post. diam., mid.	Condition of 10th rib.	Index No. 1.	Index No. 2.		Right kidney.	Left kidney.	Remarks.
1	N. McL.	27	S.		66	161		78	50.5	25	12	23.5						L.	64.7			N.	N.	
2	Maude F.	36	M.	1	92.7	166	88	79	52	16	13	23						F.	65.8			"	"	Abdominal wall quite lax.
3	Emma S.	35	"	5	73	156	83	76	51	14	13	24						"	67.1			"	"	Abd. wall loose; Lac. cervix; u. normal.
4	Mary H.	54	"	11	60.5	154	73	69	47	15	13.5	18.5						"	68			"	"	Abd. very lax; tip of R. K. can be felt but not movable.
5	J. K.	40	"	2	79	164	91	83	57	17.5	12	27.5						L.	69			"	"	Operation for gall-stones.
6	K. W.	21	"	3	67	159		72.5	51	13.5	13	24.5						"	70			"	"	
7	Josie S.	27	S.		68	160	80	71	49	16	11	22							69			"	"	Lax abdomen; easily palpable.
8	L. V.	31	M.		59			70	49	14.5	12	22.5						L.	70			"	"	Complete procidentia uteri.
9	F. D.	25	"	0	55	157	76	68	49	13	15	21						F.	72			"	"	Abdomen soft, palpable; muscles firm; great wheeler.
10	D. A.	30	"	1	66	157		72	52	15	13	24						L.	72			"	"	
11	H. A. M.	42	"	0	73	160		73	53	15	11	27						"	72			"	"	Never pregnant. Small sub-serous fibroid. Operated.
12	Mrs. C.	35	"		54.5	155		69	49.5	13	17	19.5						"	71.7			"	"	
13	O. B.	49	"			161		74	54	16	15	23						"	73			"	"	Prolapsus uteri; varicocele; hemorrhoids.
14	A. A.	35	"		66	164		68	50	13.5	15.5	21							73.5			"	"	Perineum and uterus normal.
15	Nellie K.	30	"		61	160	75	68	50	16	13.5	20.5						F.	73.5			"	"	Standing 65; End 76.9; tip of R. K. can be felt but is not movable.
16	Mrs. W.	34	"		61	165		68	50	15.5	15	19.5						L.	73.5			"	"	Tip of R. K. felt on deep inspiration.
17	M. C.	37	"		62	157		68	50	14.5	12	23.5						"	73.5			"	"	
18	J. H. M.	30	"	0	65	164	79	74	54.5	16	14	24.5						"	73.6			"	"	Abd. very lax; large fibroid of uterus; removed; tip R. K. palpable on deep insp.
19	May M.	40	"			164	85	72	53	16	14	23						"	73.6			"	"	Had fall; thrown forward, then on back; miscarried.
20	A. C. L.	56	"	4	95			76	56.5										74			"	"	Complete procidentia uteri. Operated.
21	E. H. L.	51	"			167		70.5	52	17	12	24							73.7			½	"	
22	Hulda S.	32	S.	0	49		74	64	47.5	14	15	18						F.	74.2			2d	1st	Both kidneys enlarged from tuberculous pyelonephrosis.
23	C. S.	22	"	0	71	169	79	71	53	13.5	16.5	23						L.	74.5			N.	N.	
24	G. P.	34	M.		66	166		72	54	15	11.5	27.5							75			"	"	No corset worn.
25	E. I.	31	"	0	50	151		64	48	13.5	15	19.5						L.	75			"	"	
26	Mrs. N.	24	"		62	163	75	68	51	14	14	23						"	75			"	"	Pregnant 3 mo.; abd. lax; easily palpable.
27	A. A. S.	34	"		57	154		67	51	13	15	23						"	76			"	"	Laceration of perineum and cervix; abd. very lax; tip of R. K. felt, standing.
28	E. E. M.	39	"		61	162	75	67	51	13.5	16	21.5						F.	76			"	"	Perineum and uterus normal; abdominal walls firm.
29	Annie A.	31	"	0	65	165	82	71	54	15.5	15	24.5						F.	76			"	"	Hard worker; chronic salpingitis; one miscarriage.
30	I. L. M.	37	"	0			78	68	52	14.5	14.5	24							76.4			"	"	Had fall, striking on head and back.
31	Mrs. C.	35	"	6	77	164	85	72	55	15	15	25						9-10 L.	76.4			2d	"	Six miscarriages; lacerated perineum; rectocele, cystocele; 3 years ago fell six feet from stepladder.
32	Mrs. H.	27	"		63	165		66	51	15.5	14.5	21							77.3			"	"	
33	Kate F.	31	"	1	52	159	77	66	51	15	17	19							77.2			½	"	Three miscarriages; pulmonary tuberculosis; has lost much weight.
34	Sigrid P.	22	S.	0	68		77	68	51	15	15	21							77.2			N.	"	
35	M. B.	57	M.		67	162	82	68	52	14	14	24							76.4			2d	2d	Marked visceral ptosis; abdomen quite fat; fall on back 1½ years before.
36	Augusta F.	27	S.	0	53	165	77	65	50	15	14	21						F.	77			½	N.	
37	F. S.	21	"	0				68	53	16	12	25							78			2d	"	Fall on buttocks 8 mo. before; operated for append. 6 mo. before; nephropexy.
38	Miss E.	26	"	0	69.5	170	76	69	54	16	14	23						F.	78.2			1st	"	Chest deformed; marked projection forward of ribs on right side.
39	A. B.	27	M.		54.5	159		62	50	14	16	20						L.	80.6			"	⅓	Procidentia uteri.
40	D. McL.	25	"		55		79	67	53	12.5	18.5	22						"	80			2d	N.	R. K. operated in 1899, in New York; tip of R. K. only palpable in 1900.
41	Mary McC.	38	S.	0	57.2	162	73	65	52	14	13	25						F.	80			1st	"	One year ago kidney more fully movable than at present; much pain in back.
42	P. D. R.	41	M.	4		162	74	62	50	15	15.5	19.5						"	80.6			"	½	Had fall in 1898.
43	Carrie L.	41	"	10	45.5	156	79.5	60.5	49	13	14	22						"	81			2d	1st	Abdomen very lax; standing, 58.
44	L. A.	29	"	0	58		75	65	53	15	16	22						L.	81.5			1st	N.	Uterus and perineum normal.
45	Mrs. D.	40	"	2	58		75	64	52	14.5	15.5	22						L.	81.2			2d	"	Pregnant three months.
46	M. C.	21	S.	0	54	162		63	52	16	12.5	28.5						"	82.5			½	⅓	
47	H. B.	40	M.	0		162		64.5	50.5	14.5	17	19						"	82.1			3d	N.	Never pregnant; hysterectomy two years before; severe symptoms.
48	L. W.	54	"					64.5	53	14	14.5	24.5							82.1			1st	"	Right inguinal hernia for years; fall on back one year before.
49	W. C. W.	31	"	2	51	159	70	69	48.5	12.5	15	22						F.	82.5			2d	"	Perineum normal, uterus retroverted; nephropexy and shortening round liga.
50	H. S.	60	"	2		167		65	53	15	16.5	21.5						L.	81.5			1st	"	
51	C. A.	30	S.	0	44	153		57	47	13	15	19						"	82.4			2d	"	Neurasthenia.
52	A. L.	22	"	0	64	165		66	54	15	15	24						"	81.8			"	"	
53	E. H.	37	M.					61	50	16.5	14.5	19							82			1st	"	Retroflexio-uteri.
54	T. H. B.	26	"	0	46	154	70.5	58	48	13.5	14	20.5						L.	82.7			½	"	One miscarriage at seven months from fall; left salpingitis.
55	Annie J.	29	S.	0	62	166		67	55.5	15.5	13	27						"	82.8			1st	"	
56	Mrs. P.	38	M.		45.4	156		59.5	49.5	14	14.5	27						"	83.2			2d	1st	Perineum and uterus normal.
57	Mamie C.	27	"	0	58	161		61	51	15.5	13.5	22						"	83.6			1st	N.	Perineum and uterus normal.
58	Miss B.	37	S.	0	50	162	73.5	68	53	14	14	25						"	84			"	½	Salpingitis, small fibroid of uterus; salpingectomy and myomectomy.
59	N. K.	40	M.	4		164		65.5	55	14	14	27						"	84			2d	2d	Perineum and uterus normal; fall 1½ yr. before, fracturing left 10th rib.
60	F. G.	34	"	3	63	168		68	57	16	16.5	24.5						"	83.8			"	½	Slight laceration of perineum; ut. norm.
61	Mrs. S.	32	"		59	157		59	49.5	13	15.5	21						"	84			1st	N.	
62	I. S.	38	"		48	156		57	48	15	13.5	19.5							84.2			"	⅓	Perineum and uterus normal.
63	N. S.	28	S.	0				59	50										85			2d	N.	Nephropexy.
64	Mrs. G.	37	M.		66	177	77	66	56	15	16	25						F.	84.8			"	2d	Two years before fell down stairs; had right perirenal abscess.
65	Mrs. S.	24	"	1	52	157	67	56	48	13	14	21						"	85.7			"	"	Abd. muscles firm; worked in dry goods store 4½ years; lifting overhead boxes.
66	Miss F.	21	S.	0		163	71	57.5	49.5	13	17	19.5						L.	86			"	N.	Nephropexy, May, 1898; Dec., 1900, kidney still in place.
67	Fl'r'nce H.	31	"	0	53.6	163	73	61	53	13.5	15	24.5						F.	86.8			"	1st	Worked in dry goods store for several years. Quite severe symptoms.
68	Mrs. B.	39	M.	4	66	172	77.5	63	55	16	18	21						"	87			"	N.	Uterus normal at times; slight laceration of perin.; perrineorrhaphy, nephropexy.
69	S. S.	29	"	2	57	163	5	59	51	15	13.5	22.5							86.4			"	1st	Laceration of cervix, perineum; epilepsy.
70	Cora N.	26	S.	0	54.5	170	69	57	50	13	17	20						F.	87.7			"	"	Fall on back 4 mo. before; been troubled with urinary symptoms long before fall.
71	A. H.	44	M.		49	155	68	56	49	13	15	21						"	87.5			"	"	Hysterectomy for fibroids.
72	W. A. M.	33	"	2	51	165		60	53	19	13	21						L.	88			1st	N.	Laceration, cervix and pelvic floor; retroversion and prolapse of uterus.

Number.	FEMALES.	Age.	Married or single.	No. of children.	Weight.	Height.	Circumference at lower end of sternum.	Circumference at lower edge of 10th rib.	Jugulo-symphysis.	Length of upper zone.	Length middle zone.	Length of lower zone.	Lateral diameter, upper.	Lateral diameter, middle.	Lateral diameter, lower.	Anterior-post. diam., upper	Anterior-post. diam., mid.	Condition of 10th rib.	Index No. 1.	Index No. 2.		Right kidney.	Left kidney.	Remarks.
73	R. L.	37	S.	0		165		60	53	15	17.5	20.5						F.	88			2d	"	Cystitis.
74	Mrs. E.	24	M.		44.5	160		56	49.5	14	16	19.5						L.	88.4					
75	Miss R.	33	S.	0	47.5	161		56	49.5	14	15.5	20							88.5			1st	½	
76	L. C.	20	M.	2		160	67	56	50	14	16.5	19.5						F.	89.3			2d	"	Laceration cervix; retroflexio-uteri.
77	M. H. W.	31	"	2	53	165	71	59	53	15	15.5	23.5						"	90			"	2d	One miscarriage, uterus norm.; had fall.
78	A. L.	29	"	3	52	163		61	55	14	15.5	25.5						L.	90			1st	½	Left ovary prolapsed and tender.
79	H. A. P.	25	S.	0	52	169		58.5	53	15.5	13.5	24						"	90.5			"	½	
80	Mrs. J.	26	M.	0	54.5	161		58	53	13.5	15.5	24							91.3			½	½	
81	Miss S.	23	S.	0	47	164	68	57	54	14	16.5	23.5						L.	94.7			2d	1st	
82	Miss B.	36	"	0	53	162	72	61.5	55	15	15	25						"	89.4			"	"	Right kidney somewhat enlarged.
83	D. R.	28	"	0	42	153	66	51	51	14	16	21						"	100			1st	"	Pyelitis of R. K.; probably tuberculous.

SECOND SERIES.

84	A. N.	43	M.	8	53	160	76.5	71	49	14	13	23	23	21	29.5	17.5	16	F.	69	91.3	83.4	N.	N.	
85	M. C.	53	"	2	65	157	83	72	51	14	13	24	24	20	32	17	17	"	70.8	83.3	83.3	"	"	
86	C. P.	69	S.	0	45	155	74.5	65.5	46.5	14.5	12.5	19.5	25	21	30	17.5	15	L.	71	84	72	"	"	
87	A. S.	34	S.	0	51.7	160	78	70	50	13	15.5	21.5	23	20	30	17.5	16	F.	71.4	87	79.5	"	"	
88	J. C.	33	M.	3	50.7	155	74	67	48	14	13.5	20.5	24	20	29	17	15	L.	71.6	83.3	73.5	"	"	
89	E. M.	32	"		64	170	83	73	53	15.5	13.5	24	26	21	30	18	16.5	F.	72.6	80.8	74	"	"	
90	T. N.	30	"	4	48.6	155	78	70	51	14	15	22	26	22	29	16	17	"	72.8	84.6	89.9	"	"	
91	S. F.	45	"	5	53	165	75	68.5	50	15	14	21	23	20	29	17	14	L.	73	87	71.6	"	"	
92	G. P.	45	S.	0	45	152	74.5	64	47	14.5	12	20.5	24	20	25.5	17	15.5	F.	73.4	83.3	76	"	"	Hystero-myomectomy for immense fibroids filling abdomen.
93	A. L.	30	M.	3	45	162	71	68	50	15	14	21	24	21	29	18	17	"	73.5	87.5	82.6	"	"	
94	M. J.	36	S.	0	48	167	80	74	54.5	14.5	14.5	25.5	23	20	29	18	16	F.	73.6	87	77.5	N.	N.	
95	S. A.	43	"	0	44.7	152	71	66.5	49	14	15	20	23	20	29	15	14	L.	73.6	87	81.1	"	"	
96	A. G.	38	"	0	51	162	72	66.5	49	14	13.5	21.5	22	17.5	27	17	15		73.6	79.5	70	2	½	Very lax abd. wall; palpable, not movable.
97	E. G.	42	M.	5	44	157	70	64.5	47.5	15	14.5	18	24	20	28	16	14	F.	73.6	83.3	73	"	½	" " " "
98	J. D.	33	"	7	57	162	81	70.5	52	16	15.5	21.5	28	20	30	19	15	"	73.7	71.4	56.4	4	2d	
99	S. B.	59	"	4	43.9	155	68	65	48	14	12.5	21.5	23	20	27	16	15	L.	73.8	86.9	86.8	2	N.	
100	I. C.	44	"	1	51.8	157	73	65	48	13	14	21	23	18	27	17	16	F.	73.8	81.8	77	"	"	
101	N. W.	41	S.	0	55.6	162	71	67.5	50	15	15	20	23	19.5	28	15	15	"	74	88.6	88.6	"	"	
102	J. T.	36	"	0	53	152	79.5	67	50	13	15	22	23	21	28	16	15	L.	74.6	80.8	75.7	"	"	
103	G. B.	55	"	0	53	163	75	65	49	14.5	13.5	20	23	17	30.5	17.5	14	"	75.3	73.9	59.2	2d	"	Lax abd.; lower ribs flaring.
104	M. W.	28	M.	5	55	160	76.5	67.5	51	13	17	21	25.5	22	28.5	15	16	"	75.5	86.2	86.8	N.	"	Very lax; viscera easily palpable.
105	R. H.	46	S.	0	55	172	76	68	52	14	16.5	24.5	23	20	30	19	16	F.	76.4	90.9	76.5	"	"	
106	E. S.	33	"	0	50	160	71	64.5	50	13	15.5	24.5	23	20	29	17	16	"	77.5	87	81.8	"	"	
107	D. B.	44	M.	3	61	162	78	68	53	16.5	15.5	21	27	20	30	17	15	L.	77.8	74		2d	½	Enlarged gall-bladder filled with stones; well defined Riedel's lobe; cholecystostomy, nephropexy.
108	M. B.	29	"		55	162	75	67.5	53	15.5	15	23.5	23	19	27	18	16	F.	78.5	82.6	73.4	N.	N.	
109	T. O'B.	32	"	2	57	165	77	66	52	15	15	24	24	20	30	18	17	"	78.8	83.3	78.7	"	"	
110	H. S.	27	S.	0	61	158	82	67	53	14	17	23	27	20	31	18	15	L.	79.1	74	61.7	2d	"	Received severe jar against back 1 month before.
111	H. J.	47	M.	2	48	162	70	63	50	13	15	22	23	16	28	17	14	"	79.3	69.5	57.3	Tip	1	R. K. movable; nephropexy was done a year before. (60 standing.)
112	M. W.	32	S.	0		161	73	63	50	16	14	20	25	20	29	16	15	F.	79.3	80	75		1st	Abd. lax; nothing in location of R. K. can be felt; has vent. hernia fol. laparotomy.
113	K. C.	43	M.	2	62	167	81	70	56	16	16	24	25	17	29.5	15	15	L.	80	68	49.4	2d	N.	Marked visceral ptosis.
114	E. H.	37	"	0	47	162	71	61	49	14	14	21	23	17	28			"	80.3	77.2		2d	"	Had fall from tree at 18; was laid up 5 mo.
115	M. L. W.	30	S.	0	56	157	71.5	65	53	14	16.5	22.5	22	16	28	18	15	"	81.5	72.7	60.6	2d	"	Had fall from street car 1½ years before; was doubled up by footboard.
116	Lucy W.		M.	2	57	153	73	62.5	51	13	14	24	25	16	28	17	15	F.	81.6	71.1		2d	½	
117	A. L.	37	"	6	60	170	77	68.5	56	14	16	26	25.5	18	33	16	16	L.	81.7	70.5	70.5	3d	1	
118	B. S.	34	"	4	54	165	76	61	50.5	16.5	14.5	19.5	24	17	27.5	17	14	F.	82.8	70.8	58.3	1st	N.	
119	C. B.	34	S.	0	45	165	74	59	50	13.5	14.5	23	23	16.5	26	18	13	L.	84.7	75	54.4	"	½	
120	M. McK.	47	"	0	48	172	72.5	61	52	14.5	16.5	24	23	18	30	17	13	F.	85.2	78.2	60	"	N.	
121	F. Van D.	40	M.	3	65	167	77.5	62	53.5	15.5	14	24	23	18	30	18	14	L.	86.3	81.8	63.6	"	"	
122	A. S.	32	"	1	51	160	77.5	61	53	14	15.5	23.5	23	17	29	17	12		86.9	68	55.3	2d	"	
123	J. A.	32	S.	0	47	172	70.5	58.5	51.5	15.5	16	20	23	17	30	16	13	F.	88	73.9		1st	"	
124	E. K.	34	"	0	72.2	177	83.5	63.5	56	16.5	17	22.5	23	17	30	17	14	L.	88.2	73.9		3d	½	Mucous colitis.
125	K. H.	28	"	0	47	167	69.5	56	52	15	14.5	23.5	23	17	30	18	15	"	92.8	68		1st	N.	
126	H. V.	23	"	0	45	152	66	56	52	14.5	16	21.5	20	15	26	16	14	F.	92.8	75		"	"	

Number.	CHILDREN.	Sex.	Age.	Weight.	Height.	Circumference lower end of sternum.	Circumference lower edge of 10th rib.	Jugulo-symph.	Length of upper zone.	Length middle zone.	Length lower zone.	Lateral diameter, upper.	Lateral diameter, middle.	Lateral diameter, lower.	Ant-post. diameter, upper.	Ant-post. diam., middle.	Condition of 10th rib.	Index No. 1.	Index No. 2.	Right kidney.	Left kidney.	Remarks.
1	G. O'C.	F.	3.5	13	89		42	29	8.5	9.5	11							70				
2	C. E.	M.	12	38	154	73.5	65	45.5	14	12.5	19	25	22	26	18	17	L.	70	88			
3	G. S.	M.	4	14	94.5		43	31	9.5	10.5	11							72				
4	E. H.	F.	8	17	113		46	33	9	9	14.5							72				
5	C. Y.	M.	10	26	129		53	39	11	12	16.5							74				
6	H. S.	"	9	25.4	124		52	39	11	11	14							75				
7	W. K.	"	14	56	173		68	51	16.5	16.5	18						F.	75				
8	J. E.	"	11	31	140	67	59	45	12.5	13	19.5						"	76				
9	H. E.	"	7.5	21	112.5		50	38	10	15.5	12.5							76				
10	A. M.	F.	6	20	115		51	39	10.5	14.5	14							76				
11	H. G.	"	16	53	167	73	63.5	50	13	15	22						F.	76.5				
12	E. M.	"	16		149		61	49	13.5	14	21.5							78				Chronic appendicitis; operation.
13	M. S.	M.	6.5	17	107		47	37.5	11	13	13.5							80				
14	C. S.	F.	9	22	126		49	39	10	16	13							80		N.		
15	M. H.	"	11	29	144	62	54	44	12	13	19							80				Colored.
16	R. S.	M.	6	15	106		43	35.5	10	13.5	12						F.	81.5				
17	A. E. J.	"	16	54	166	71	63	52	16	16	20							82				
18	M. G.	F.	16	63	163	78	64	53	14.5	15.5	33						L.	82.4		½	⅓	Thrown out of wagon; broke leg.
19	M. O'C.	"	12	36.3	151	69	59	49	13.5	14.5	21	21	19	23	17	17	"	82.8		1st.	N.	Two falls. Three years ago, fell, striking side on sled; two years ago, fell down stairs
20	M. B.	"	10	27	132		51	43	10.5	14.5	18							83	90.5	N.		
21	W. H.	M.	11	35	148	67	57.5	48.5	13.5	14.5	20.5							84				
22	H. W.	F.	10	25	129	57.5	51.5	44	10	16	19						L.	84.3				
23	E. P.	"	13	37	153	61	51.5	44	12	15	17							85			⅓	
24	G. H.	"	16	48	162		58.5	50	12	16	22							85			Tip	
25	A. P.	"	14.5	40	155		55.5	48	14	16	18							85			½	Chronic appendicitis.
26	S. N.	"	9	26	132		50	43	11.5	14.5	17							86			Tip	
27	H. G.	"	14		159		54.5	47.5	13.5	15.5	19							86			N.	
28	I. T.	M.	7	21	116		46	40	11	6	13						L.	87			"	Tall, slim; rapid growth.
																	Tip	87				

Number.	Males.	Age.	Weight.	Height.	Circumference lower end of sternum.	Circumference lower edge of 10th rib.	Jugulo-symph.	Length of upper zone.	Length, middle zone.	Length, lower zone.	Lateral diam., upper.	Lateral diam., middle.	Lateral diam., lower.	Antero-post. diam., upper.	Antero-post. diam., middle.	Condition 10th rib	Index No. 1.	Index No. 2.	Right kidney.	Left kidney.	Remarks.
1	G. H.	32	89	177	91	89	56	15	18	23							63		—Negative—	—Negative—	
2	Mr. ——.	50	83	170	90	83	53	16	15	22	29	25	29	19	20		63.8	86			
3	W. C. S.	39	67			76	49	15	13	21							64.4				
4	Mr. L.	45	84 5	177 5		88	58	16	18	24							66				
5	C. W. M.	23	86	181		87	58	18.5	16	23.5						L.	67				
6	Mr. J.	41	77 3	175	89	79	55	17	16	23						F.	69.6				
7	F. E.	30	67 7	172	84	74	52	18	15	19						F.	70.2				
8	J. F.	33	70	173	86	75	53	18	16	19							70.6				
9	L. B. F.	36	69	176	81	76	54	16	17.5	20.5							71				Chronic appendiciti-.
10	V. E. R.	22	77	170	87	72.5	52	15.5	18.5	18						L.	71.7				
11	T. C.	30	66	178	80	71	52	15.5	18.5	17						F.	73.2				Chronic appendicitis; operation.
12	C. C.	40	62	166		75	55	17	16	20							73.3				L. A. C. 73. Professional tumbler. well developed.
13	J. F. W.	31		171	80.5	69.5	51	15	17	19	25	22	27	19	19	Tip	73.3	88			
14	B. M.	35	61	164		70	52	16.5	17.5	18							74.2				
15	F. H. V.	40	60			68	51	18	14	19							67				
16	C. C.	30	70	172	85	73	55	18	15	22	29.5	25	28	18	17	L.	75.3	84.7			L. A. C. 71.
17	C. K.	25	62	172	75	66	50	16	17	17						L.	75.7				
18	H. F.	26	70	180	80	71	54	15	18	21							76				Chronic appendicitis. Operation.
19	Mr. P.	56	55 4	165		66	50	16	16	18							75.7			2nd	[bloody urine
20	E. R.	28	68		81	71	54	16.5	19	18.5							76				In 1882 fell 8 ft. on buttocks; in 1900 fell 6 ft. Had
21	B. E. V.	42	66	184	80	73	56	18	16	22	26	22	29	19	18	F.	76.7	84.6			⅓ of kidney felt, but not movable, slender, chronic
22	G. H.	27	73	180	83	72	56.5	18	17	21.5							78.4		N		[appendicitis
23	R. A. C.	43	75	176		74	58	17.5	21	19.5						L.	78.4		½	½	Valvular heart disease. Enlarged liver and spleen.
24	G. C. A.	20	55	175	73	66	52	15	17	20							78.8		½	N	
25	L. O. B.	19	55	178		70	55	16	20	19						L.	78.6		N	N	Very thin. Rapid growth. Chronic appendicitis.
26	J. B.	45		177		68.5	55	19	19	17							80.3		N	N	Emaciated. Carcinoma of stomach.
27	M. T. M.	23	64	175		67	57	16	21.5	19							85		½	N	

in a movable kidney which was discovered immediately after an accident is not the slightest proof of any connection between the accident and the movable kidney, nor are all other subjective symptoms of any proof so long as it can not be demonstrated with unequivocal certainty that the kidney before that time was not movable."

A simple fall is insufficient to give rise to a movable kidney in the presence of normal relations. The injury must be severe enough to produce a rupture or laceration of the tissues which normally surround and fix the organ, in which case symptoms sufficiently marked to direct attention to the nature of the injury will always be present. The kinds of injuries most liable to produce such lacerations are:

1. Severe falls upon the buttocks in a sitting position.

2. The body is thrown violently against some object striking the region of the kidney so as to forcibly adduct the lower or loose ribs. The same effect is produced if the object be movable and the body stationary.

3. This region of the body is compressed between two opposing forces. Such injuries may produce lacerations of the perirenal adipose tissue with the formation of a perirenal hematoma which may vary much in size. These hematomata are retroperitoneal and it is the exception when the peritoneum is torn. Symptoms of sufficient severity to direct immediate attention to the region of the kidney are always present in case of laceration with the formation of a hematoma of any material size. The swelling produced by the hematoma may also be usually felt on palpation, although the tenderness may be so severe as to interfere in this direction. Accompanying the absorption of such an hematoma an increased amount of connective tissue usually forms in the adipose capsule which may fix the kidney more firmly than before. On the other hand the hematoma may dissect up the perirenal fat or lead to the formation of a perirenal serous cyst in the loose space of which the kidney may move about and thus an injury may be the direct cause of a movable kidney.

The symptoms which immediately follow the injury will direct attention to this possibility, but such cases are rare. Of course an injury may produce a laceration of the kidney proper without the formation of a perirenal hematoma or the two conditions may co-exist. When the kidney substance is lacerated or the pelvis opened the presence of hematuria will direct attention to the fact.

It should be remembered that in the presence of a movable kidney a slight injury, such as a fall, or jarring of the body, or straining at lifting, may produce a slight hematuria for a few days without the occurrence of a material lesion in the kidney or other symptoms particularly referable to this organ. In fact this is so common that the presence of such an hematuria following a slight injury should at once suggest the possibility of a movable kidney and lead to an examination with this point in view. The more often such examinations are made immediately following such injuries the less often will it be found that the injury had aught to do with causing the movable kidney.

The fact that a movable kidney is surrounded by a loose peritoneal and connective tissue pouch which must necessarily be of slow formation, precludes the possibility of a movable kidney being produced suddenly by an injury. It is in just this class of cases that the value of correctly estimating the body form by the measurements as herein mentioned is so apparent. Thus if a woman with an unmistakable body form of the positive type present herself with a movable kidney which is said to have followed an injury it may with practical certainty be asserted that the movable kidney is the result of the body form and arose independently of the injury. The injury but calls attention to a condition already present but perhaps unrecognized. Of course it is not denied that a movable kidney may be aggravated by an injury or that such a kidney may be injured by external violence as well as a kidney that is fixed.

Of the cases comprising the table there were two belonging to the negative type in which a history of an accident, such as might have injured a kidney, was present, but in neither of these could the kidney be felt.

Of the positive cases, 7 gave a history of a fall or other injury. One, No. 70, was not aware she had a movable kidney, but gave a history of unmistakable symptoms referable to the urinary organs and stomach which antedated the injury, thus clearly eliminating the injury as a causal factor in the movable kidney.

In Case No. 110 the injury, a jarring of the back, was claimed as the cause of the movable kidney. She

was examined within a month after the injury, when the kidney was found so freely movable and so devoid of tenderness and the injury was so slight as to preclude the possibility of a causal connection.

Case No. 12 had a fall, injuring the knee, but the region of the kidney was not involved and the presence of the movable kidney not suspected.

In Case No. 59 the injury was undoubtedly instrumental in producing the mobility of the left kidney. The right kidney was also very movable, but this was an old condition. Following a rather severe injury to the left side in which the left 10th rib was fractured there developed a large swelling, hematoma, about the left kidney which was very painful, was accompanied by hematuria and confined the patient to bed for several weeks. The swelling was several months in disappearing and a year after the accident the kidney was still somewhat enlarged, tender and movable. In this case there was no question as to the injury to the kidney and its surroundings.

In Case No. 37 it was first thought that the injury bore a causal relation to the movable kidney. A chair was removed from behind the patient as she was about to sit down. She sat down on the floor very heavily. Considerable pain and tenderness in the right side with light fever followed for some time. The tenderness was so limited to the region of the cecum that chronic appendicitis was diagnosed. Some two months later the appendix was removed. It was not found to be directly involved but recent adhesions were found between the cecum and ascending colon and the abdominal wall. Six months later the patient returned, still complaining of pain in the back and right side. The freely movable kidney was now recognized and nephrorrhaphy performed with relief from the symptoms. It seems probable, after reviewing this case with the knowledge furnished by the two operations, that the kidney was movable at the time of the fall and that the sudden motion given to it by the fall produced the mild traumatic peritonitis about the cecum and colon which produced the symptoms. At the operation on the kidney there were no evidences found of an old hematoma nor of unusual formation of connective tissue.

In Case No. 114 the injury, a fall from a tree, occurred twenty years ago and the history was too indefinite and remote to be considered at this date.

Case No. 35 was a poor, hard-working woman with a pendulous abdomen and marked visceral ptosis. A year and a half before, she fell on her side on the street. Both kidneys were movable to the second degree, and it was claimed that the fall was responsible for this condition. The fall, however, was not a severe one: no complaint was made at the time of any trouble in the region of the kidneys; the pendulous abdomen and visceral ptosis were present for a long time before the fall. It is more than probable therefore that the kidneys were movable at the time of the fall and that the injury had no effect whatever on them. Thus of the 7 cases in only one had the injury any causal relation to the movable kidney and in this case a material lesion in the shape of a large perirenal hematoma was present which was distinctly recognized at the time and which produced severe symptoms confining the patient for several weeks to bed.

Based upon these facts it may be concluded that the popular belief in the traumatic origin of movable kidney is not supported by the evidence, and that it is highly improbable that a single injury, such as a fall, which does not produce a material lesion of the perirenal tissues recognizable by well-defined symptoms is ever the immediate cause of a movable kidney.

It would be of considerable interest to know at what age or period of life the body form becomes established and how soon it influences the location of the kidney. I have not sufficient data at present upon which to base an opinion on this point, and it can only be determined after a systematic examination of a large number of individuals during the developmental period.

The measurements of a number of children are contained in the table, but the number is too small to permit of an analysis. It is evident, however, that in early childhood there is no material difference in the body form of the two sexes. The number of men upon whom measurements have been made is also too small to establish normal averages, and as there was but one case of movable kidney in the number no differences can be drawn between negative and positive cases. The measurements taken, however, show that the lower zone is much smaller than in women, while the middle and upper zones are larger. The increased size of the middle zone is particularly suggestive, inasmuch as movable kidney is so rare in men compared with women. The tendency is to a low index No. 1, and a high index No. 2, which is characteristic of the negative body form. The man in whom the movable kidney was found had two or three severe falls of several feet, one of which was followed by hematuria and distinct evidences of a lesion of the kidney.

Stiller has somewhat recently called attention to the association of a loose or floating 10th rib and movable kidney. He claimed the association was so constant as to establish a relation between the two, and a floating 10th rib was therefore called the "Stiller stigma," or the Stiller sign of a movable kidney.

The condition of the 10th rib was noted in 110 of my cases, 49 of which were negative and 61 positive. Of the negative cases the 10th rib was found loose in 26 and fixed in 23. In the positive it was loose in 38, fixed in 22, and in one case both the 9th and 10th were loose. By the term "loose" is not necessarily meant absolutely free and floating, as are the 11th and 12th ribs, as this condition is not common, but in case the attachment of the rib to the costal arch was so slight as to permit considerable free motion independent of the costal arch it was said to be "loose." In case the attachment was so firm as to prevent any material independent motion it was said to be "fixed." From my examinations, therefore, Stiller's observations can not be confirmed. While a loose 10th rib is the rule in women it bears no definite relation to the presence or absence of a movable kidney.

The contraction of the middle zone explains the great frequency with which the so-called vertical stomach is associated with movable kidney as the pylorus and upper duodenum descend more or less with the kidney while the cardia remains fixed by the esophagus.

It is not the intention to discuss the clinical aspect of movable kidney, hence the symptomatology, diagnosis, etc., will be passed without further remarks.

Concerning the treatment, attention will be briefly directed only to the method of operating, but it is not to be understood by this that it is necessary to operate all cases, as such is far from being the case. However, when it is decided that the symptoms with which a patient suffers are due to the movable kidney there is little reason to hope for permanent relief by any other

method than that of operative fixation of the organ. The tendency in recent times has been to fix the kidney too high up, apparently from the idea that the disturbances were due rather to the fact that the kidney was too low than that it was too freely movable. If the points brought out in this contribution are correct, the descent of the kidney has been brought about by the fact that the middle zone of the body cavity, in which the major portion of this organ normally should lie, is too small to contain it. It would therefore appear unreasonable to attempt to fix the kidney in a cavity too small for it and from which it had been ejected.

Should this be done, however, the same factors which caused the kidney to become movable in the first place are again brought into action with the probabilities of a recurrence. Or should the kidney be so firmly fixed in a high position that it can not again be displaced, symptoms even more severe than those for which the operation was undertaken may result. The author has recently seen two such cases operated on by most excellent surgeons, one in Chicago and the other in New York, with perfect operative result. The kidneys were high and firmly fixed, yet in both cases suffered infinitely more after the operation than they did before, and in one case the suffering became so intense that about two years after the first operation relief was obtained by removing the kidney entirely.

The principle then that should guide us in fixing a movable kidney is to take into consideration the body form and fix the organ in a location where it will not again be subjected to the same influences which caused its descent. This means that the kidney should not be crowded up to the highest point, but fixed lower down, in an easy position and so the ureter will escape at the most dependent part. If this be done the chief cause of relapse will be removed. The method of operating is as follows:

A muscle splitting incision is made, beginning a little in front of the tip of the 12th rib and extending downward, forward and inward in the line of the fibers of the external oblique muscle. These are separated bluntly and then the fibers of the internal oblique and transversalis, which cross the line of incision at almost a right angle, are separated in the same manner. The peritoneum is carried inward and the perirenal space entered. All the perirenal fat is removed, but the prerenal fascia is carefully preserved. The upper portion of the ureter should be examined to see that it is not fixed and thus become flexed or kinked by moving the kidney. The prerenal fascia with the peritoneum covering it, and to which it is usually quite firmly attached throughout its anterior and inner portions, forms the pouch or sac in which the kidney moves. This space, bounded by the prerenal and retrorenal fasciæ, sometimes called "Gerotta's space," is somewhat triangular in shape, with its apex extending downward toward the brim of the pelvis.

The object of the operation is to so close this space and contract the pouch or sac that the kidney will no longer have a free space in which to move. This is accomplished by closing this space from before backward with catgut sutures. The colon lies just anterior to this space and should not be injured. Should the pouch in which the kidney moves be very large and bulge the peritoneum to the inner side of the colon, a small opening may be made into the peritoneal cavity just to the outer side of the colon and the sutures passed through the mesocolon from within, thus approximating this layer to the posterior abdominal wall and obliterating or diminishing the pouch. By passing the sutures in this manner the danger of including the colica dextra or sinistra artery, as the case may be, in them is avoided. The branches of the lumbar plexus of nerves on the posterior wall should also be remembered and care taken not to include them in the sutures.

The effect of suturing in this manner is to obliterate the space in which the kidney has been moving up and down. The outer edge of the prerenal fascia is then sutured to the lumbar fascia posterior to the line of incision through the walls. By drawing more on the upper or lower portion of the fascia the kidney may be rotated on its antero-posterior axis as may be necessary in order to bring the ureter at a proper dependent position. When the operation is finished the kidney will be found firmly held in position, yet not so fixed that it can not move up and down slightly, as a normal kidney should during respiration. All abnormal excursions of the kidney, however, are completely arrested, although the organ occupies a lower position than normal. No stitches involve the kidney substance. The operation was not of sudden birth, but of gradual development during the past three or four years. Clinically the results have been good, and in patients examined as long as two years after the operation, the kidney has been found still in the location in which it was fixed, and without any increase in its range of motion. In closing, the following conclusions are presented.

1. The essential cause of movable kidney lies in a particular body form.

2. The chief characteristics of this body form are a marked contraction of the lower end of the middle zone of the body with a diminution in the capacity of this portion of the body cavity.

3. This diminution in the capacity of the middle zone depresses the kidney so that the constricted outlet of the zone comes above the center of the organ and all acts, such as coughing, straining, lifting, flexions of the body, etc., which tend to adduct the lower ribs press on the upper pole of the kidney and crowd it still further downward.

4. It is the long continued repetition, in a suitable body form, of these influences, which collectively may be called internal traumata, that gradually produces a movable kidney.

5. A distinctly movable kidney is never the immediate result of a single injury or external trauma.

THE APPENDIX VERMIFORMIS AND CECUM. A COMPARATIVE STUDY. (1814-1901.)

B. MERRILL RICKETTS, PH.B., M.D.
CINCINNATI, OHIO.

It will be the province of this paper to deal rather extensively with the comparative study of the appendix vermiformis and cecum of a few of the members of each of the four divisions of the sub-kingdom, Vertebrata. It will be shown that the appendix vermiformis is not found exclusively in the mammals, but is also found in birds, reptiles and fish.

MAMMALS.

The colon is largest in mammals, and its junction with the ileum generally has a single cecum. The anthropomorphous apes, such as Hylobates (gibbons), Simius satyrus (orang), Troglodytes (chimpanzee and gorilla), each possess a cecum, with a processus vermiformis or appendix, while the cynomorphous apes,

(dog-like) baboon, and mandril, etc., each have a small cecum without an appendix, as do also the Platyrrhina (flat nose) monkeys. The long-tailed monkey has a cecum of pyramidal form. In the other order of mammals the cecum is generally present, but the appendix vermiformis is absent with but few exceptions. In the various prosimials—earlier ancestors of monkeys—and in many rodents, the cecum gradually narrows into a vermiform appendix. In the carnivora, the cecum is short, and even absent in the bear, hedgehog and weasel. It is large in the herbivora, while the lagomys has one large and one small cecum. The small intestine in the camel is 71 feet long, the colon and rectum 56 feet and the cecum 3 feet long. The cecum is capacious at first, then narrow to form spiral convolutions which taper off. The small intestine of the elephant is 38 feet in length, the colon and rectum 30½ feet and the cecum 1½ feet long. The horse has a small intestine 56 feet long, the colon and rectum 21 feet and the cecum 2½ feet long; the cecum in the young graminivorous mammalia, while in the suckling stage, is as little developed as it is in the carnivora throughout their lives.

The hog, cow, sheep, and rhinoceros each possess a very large cecum, while that of the tapir is small. That of the hog is one-sixth the capacity of the stomach, and is that portion of the alimentary tract used for sausage casings.

None of these animals, from the camel to the hog, just mentioned, possess an appendix vermiformis, although the carnivora, as a rule, have an appendix. In the dog and cat it is especially large, even though Huxley has stated to the contrary concerning the dog, in which there is an appendix as great in diameter as the gut to which it is attached. The whale has a cecum but no appendix. The manitee has two vermiform appendices, while the seal has only a cecum. The beaver has a cecum 2 feet long. In the rat the cecum is as long as the stomach, while in the hare there is a glandular structure near the valve of the colon, which corresponds to the vermiform appendix. The cecum itself is enormous in size. The galeopithecus and koala, like the Indris, also have enormous ceca. The ceca of the mammalia depend on the required amount and kind of food. In man, various apes, and monkeys the cecum is at first as large as the colon, or it grows wider until, at last, it contracts to form a vermiform appendix. The opossum has a very simple and short cecum in proportion to its size.

Among the marsupials the wombat is found to possess an appendix very much like that in man. While the kangaroo has a large cecum without an appendix. The Dasyuridæ, another family of the marsupials, has no cecum at all. The monotremes possess small worm-like ceca which suggest the belief that the appendix of the wombat is an abruptly atrophied form of the free end of the cecum. This is borne out by the fact that the lemuroids have a very long cecum, drawn out into an elongated conical termination. The armadillo and hyrax have more than one cecum, the former having two and the latter three. The myrmecophaga didactyla, one of the ant-eaters, has two ceca. This fact not only beats out the allegations of some writers that the ant-eaters are nearly related to the birds, but, in connection with the fact that other animals also have more than one cecum, proves the truth of evolution.

In general the digestive organs in man in the healthy state resemble those of the carnivora in youth, and in later years those of the herbivora.

Those animals which live upon highly nutritious food that requires but comparatively few changes to prepare it for absorption into the body have small rudimentary cecum or none at all, while those that feed on vegetable matter possess a rather large one. It is highly probable that the cecum in the vegetable eaters plays an important part in the digestive process. The continued presence of the cecum in the higher orders of vertebrates is evidence of Nature's attempt to make use of an organ that has lost its original functions. Nature does not believe in idleness; there can be no existence without work.

BIRDS.

The ceca (or vermiform appendix) opening into the rectum of birds are particularly long in domestic fowls, such as the pheasant, peacock, turkey, goose, swan, and others that live on vegetables. It is less so in the owl, cuckoo, crane, snipe, and pelican. It is still shorter in the dove, and hoopoos. The ostrich has a cecum possessed of a spiral valve, as have also the raven, thrush, finches, etc. It is shortest of all in the diurnal birds of prey, such as eagles, hawks, and falcons. The cecum is single in the titmouse, storks, and gulls, but spirally convoluted in the heron, bittern (shitepoke—Indian hen), and divers in general. It is wanting in parrots, pickers, king-fishers, and cormorants. In birds the ceca are generally paired and vary in extent from short papillæ to long tubes. These long tubes are found in the chicken, duck, and in the lowest of all recent birds, namely, the kiwi-kiwi (apteryx), a wingless bird found in Australia only. Two rectal appendices are found in the guinea-hen, while all birds generally have two ceca. The owl's cecum is longer than any of the carnivorous or piscivorous birds—two ceca. Common ducks have two ceca—eight and nine inches long, widest at the middle, forming a cone. A duckling three weeks old has a cecum three inches long. The common pigeon—Columba livia—has two small ceca.

REPTILES.

Reptiles as a class have no cecal appendix; some snakes have a cecum, others have but a rectal cecum. A long cecum was found in a large African snake. The chameleon differs from lizards that live upon animal food in having a short cecum. The iguana also has a short cecum. The land tortoise of South Carolina has a cecum immediately behind the stomach, which is simply a pouch with an oblique valvular opening.

FISH.

In many instances there are a great number of appendices known as pancreatic ceca, about the stomach of fish, as shown in the white salmon (Stizostidium Americanum), commonly called the wall-eyed pike, in which seven appendices pylori are found, tassel-like in appearance. These are especially found in the salmon and common trout. They are numerous in the sturgeon, and in the sword-fish they are consolidated into a mass glandular in appearance. But in the polyodon sturgeon they are separate. They are numerous in the gar pike and many higher fishes. They are, however, more numerous and very long in the ling, cod-fish and mackerel, and still more numerous in the Teleosteans in which the number of appendices varies from 1 to 200. The pilchard has 50 and the whiting about 120. They also vary in size and width. The narrowest serve only as secretory organs; the wider are frequently filled with the same contents as the intestines. The secretion of

these appendices corresponds to that secreted by the pancreas in man, and is just as important in the process of digestion. The Bichir, found in the Nile, possesses only one appendix, while several of the soles have but two small pyloric ceca. The food-fish has two large ones. Bony fishes as a rule have several or many cecal pouches attached to the commencement of the alimentary canal. The cecum is absent in the carp, eel, lamphrey, ray, shark, and many others; however, they are extremely numerous in the electric eel.

It is interesting to know that pyloric ceca have been found in types of still lower subkingdoms.

The common cockroach (Pesiplaneta orientalis) has a whorl of eight ceca arranged around the commencement of the chylific stomach, the function of which is probably analogous to that of the liver.

The cellar slug (Limnea flavus S. varagatus) has a cecal projection at the pyloric end of the stomach.

The starfish are the lowest class of animals in which a distinct cecum is found. The radial arrangement of the digestive or hepatic ceca may be found in the first ray.

CECUM AND VERMIFORM APPENDIX IN MAN.

ANATOMY.

The minute structure of the appendix offers a wide and unbroken field for research. There is very little literature on the histology of the appendix, either normal or pathologic. It is known, however, that the appendix resembles in a general way the other intestines in structure. The little that is known can be comprised in the statement that the fibers are arranged spirally, and that adenoid tissue is found in its structure. A fold of peritoneum forming a mesentery is often found, the blood supplied by a branch of the superior mesenteric artery which varies in size. The nerve supply to the superior mesenteric artery extends from the small intestine and large bowel and from the appendix to the splenic flexure.

APPENDIX VERMIFORMIS.

This is attached to the lower and back part of the cecum. It is a long, narrow, worm-like tube. It varies from one to sixteen inches in length, and its normal diameter also varies greatly. Usually it points upward and inward behind the cecum. It has been found absent but five times in 10,000 autopsies. This is probably due to it being covered by peritoneum, for when so concealed its presence can not be detected by sight or the sense of touch. Its length, diameter, position and caliber of its lumen greatly vary. An infant at the time of birth may have an appendix as large in every particular as a giant. The valve of Gerlach is proportionately larger in infancy than in old age, the after-stenosis is probably due to prolonged irritation.

THE CECUM.

In man the cecum is 2¼ inches in length and 3 inches wide. It is the most dilated part of the tube, measuring 2½ inches in the vertical and transverse diameters. It varies in position, but usually rests upon the psoas muscle, placed so that the apex projects beyond the inner border of that muscle in the male. In the female the apex lies internal to the psoas muscle as the pelvis is broader, thus causing that muscle to deviate more to the right than in the male.

The apex may be internal or external to Poupart's ligament, upon the pelvis brim, or within the pelvis and covered entirely by the peritoneum, a condition not infrequently found.

In the new-born child the cecum is quite undeveloped and the difference in size between the large and small intestine is nearly imperceptible. This is true in health during youth. In the middle age only does the cecum become much more extended than the small intestine.

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ZOOLOGY IN THE MEDICAL SCHOOL CURRICULUM.

CH. WARDELL STILES, PH.D.
Zoologist, United States Bureau of Animal Industry
WASHINGTON, D. C.

Let it be admitted from the start that this paper is written from the standpoint of a zoologist, hence that it is not entirely free from the charge of being a biased statement; let it also be admitted that the medical school curriculum is already full to overflowing; further that it is not the function of a medical faculty to give to a man a general education, but rather to teach him to diagnose diseases and prescribe treatment.

In order to avoid misunderstanding, the writer makes these admissions at the outset; yet he nevertheless contends that zoology should have its place in the medical curriculum, just as much as should chemistry and botany. It is not contended that elementary or general zoology should be taught, any more than it would be contended by a chemist or by a botanist that elementary or general chemistry or botany has an inherent right to representation. All fair-minded men will, however, admit that a medical curriculum which failed to recognize certain specialties of chemistry and botany, for instance toxicology and bacteriology, would indeed appear strange and would not be entirely free from criticism.

To the writer, as a zoologist, it seems no less strange that few medical schools in this country recognize medical zoology as one of the subjects to be taught. Nor does this fact appear to be explained by any requirements of a general or special knowledge of zoology before beginning to study medicine. On comparing the medical schools of America with those of Europe, it may be noticed that the transatlantic faculties, almost as a rule, either require zoology of a student before he begins medicine, or require it during his course, or offer it to him as an elective. Of American medical faculties—not including the veterinary schools—there are only three, so far as my personal knowledge goes, which recognize medical zoology in the curriculum.

I do not refer in this paper to histology and embryology, which all medical schools teach more or less, nor even to teratology and evolution; but reference is made to the practical and intimate relation which zoology bears to disease and to public hygiene. And it is submitted that since medical schools prepare students to practice medicine, medical zoology should be included in this preparation, with just as equal right as medical chemistry or medical botany. It is submitted

that just as we give special lectures on the chemicals (poisons—biochemistry and toxicology) and plants (bacteria—bacteriology) which cause disease, so if our instruction is not to be one-sided, we should also give courses on the animals which produce pathologic conditions.

Such a course should be placed in the third or fourth year of medical studies. Experience has, in fact, taught that it is not altogether satisfactory to give these lectures to the second and still less to the first year men. The course should be composed of both lectures and laboratory work. Text-book work is not entirely satisfactory, because the works on medical zoology thus far published are either treatises which are more suited as works of reference than they are as text-books, or are too brief and "too zoological" to be of much practical use. Moreover, with all the new work in this line, the subject advances from day to day, so that at present text-books published prior to 1900 are already more or less out of date. The instructor should not spend his time discussing the newest theories of cytology and heredity, but should bring forward practical zoologic information of which the physician can make practical use. The amount of such data will depend primarily on the amount of time allotted to him and on his own experience in the zoologic groups in question. The ideal plan is that followed by the Paris School of Medicine, where there is a regular chair of medical natural history, now occupied by Raphael Blanchard, who takes up such biological subjects as in his judgment are useful to the students. He can, for instance, give a course on parasitic diseases one term for the entire class, a more special one on teratology another term, while during a third he may take up some other special field, of interest perhaps only to a few students, hence only a few will attend.

Such an arrangement is scarcely feasible at present in the majority of American medical schools. Some instruction is, however, feasible, and as a basis for this I would present the following as a general outline: Two to six lectures may be given as an introduction, according to the time allotted. In these may first be discussed the different degrees of parasitism, and the relation of parasitism to climate, seasons, age, sex, race, personal habits, etc.; the different ways in which parasites affect their hosts; the general and public hygienic measures; the classification of parasites. At this point an hour should be given to a discussion of the classificatory names and the rules which govern them—rules of nomenclature. The object of presenting this rather special subject to medical students is to show them the methods of nomenclature followed in a science where we deal with hundreds of thousands of technical names, basing their use on a certain system; by so doing we can give to some of the future bacteriologists the experience of a century and a half of nomenclatural work in zoology, so that they may some day succeed in rescuing the nomenclature of bacteriology from the frightfully chaotic state into which it is falling, or has already fallen.

From this subject the lecturer can pass to the lowest animals, and discuss Amiba coli, described as the cause of amibic dysentery; after reviewing the various other amibæ reported for man—for instance, Amiba intestinalis, A. urogenitalis, A. buccalis, etc., he can take up the three parasites of malaria—Plasmodium malariæ, P. vivax, P. præcox—and discuss the disease from a zoologic standpoint, its transmission by Anopheles, but not by Culex, etc. Next, reference would naturally be made to Texas fever, caused by another sporozoon—Piroplasma bigeminum—for which a tick known as Boophilus bovis is the intermediate host. The national economic importance of and quarantine against the disease can be referred to; also the economic importance of diseases of fish produced by the Myxosporidia, and of silkworms, produced by Microsporidia; the Sarcosporidia, as well as Gilchrist's Coccidioides, and the parasitic theory of cancer should, of course, be mentioned.

Passing up in the animal kingdom, the various ciliate and flagellate parasites of man—none of them of much medical importance—can be touched on; then the medicinal sponges should be exhibited, while they and the coelenterata can be described in the various medical relations—as accessory instruments, as instruments for murder, as cause of urticaria, as producing shock, as treatment used in various countries.

Next naturally follow the trematode worms, which are parasitic in man—Monostomulum lentis, Agamodistomum ophthalmobium, Fasciola hepatica, Fasciolopsis Buskii, Paragonimus Westermanii, Dicrocoelium lanceatum, Opisthorchic felineus, O. sinensis, Heterophyes heterophyes, Schistosoma hæmatobium, Amphistoma hominis. Most of these parasites have been unimportant for the American medical profession, up to the present time, but now that Paragonimus is established in this country, it becomes of no little importance as a cause of parasitic hemoptysis and Jacksonian epilepsy. Furthermore, our troops being in Asia, now make Opisthorchis and Fasciolopsis important genera for us.

The tapeworms come next: Tænia solium, T. saginata, T. confusa, T. africana, Dipylidium caninum, Hymenolepis murina, H. diminuta, Davainea madagascariensis, Dibothriocephalus latus, D. cordatus, Diplogonoporus grandis, Ligula Mansoni, and the troubles they produce; also hydatid disease and pseudotuberculosis caused by larval tapeworms.

It seems remarkable to me that most physicians do not appear to go beyond the fact that a patient has a tapeworm. What particular species is present does not interest him. This lack of detail is a natural result of not presenting to the students the difference in medical importance represented by the various species.

Following the tapeworms, the round worms of man may be discussed: Ascaris lumbricoides, Oxyuris vermicularis, Strongylus longevaginatus, Uncinaria duodenalis and its relation to anemia, Dioctophyme renale, Trichuris trichiura, Trichinella spiralis—as cause of trichinosis—Filaria and elephantiasis, Strongyloides in diarrhea, Gordius, Mermis, and Gigantorhynchus.

After the worms come the parasitic arachnoidea: Sarcoptes, the cause of itch; the national economic importance of Psoroptes; Demodex; the ticks; and Linguatula and Porocephalus. Here are also discussed the poisonous spiders, scorpions, etc. Then the insects, both as pests and as transmitters of disease; finally the poisonous snakes.

I do not insist that every physician should keep the above scientific names in mind, but I do submit that with so many American troops in the East, every physician who pretends to know that tuberculosis is produced by the Bacillus tuberculosis should also know that parasitic hemoptysis—so common in Asia, and already introduced into this country—is caused by Paragonimus; I will not insist on his being able to recall all the various liver-flukes by their eggs or names, but it is not unreasonable to maintain that he should know that quite a common liver disease in Asia is caused by

Opisthorchis sinensis, while the Russian troops—with whom our troops have been associated—are subject to O. felineus (O. tenuicollis); hence some of the liver troubles of which our returning troops are likely to complain can be diagnosed only by recognizing the eggs of these worms in a microscopic examination of the feces. I do not argue that our medical students should be able to distinguish the millions of insects in the world, or that they should make a collection of beetles instead of bones, but in view of the demonstration that certain species of mosquitoes, belonging to the genus Anopheles, transmit malaria, other mosquitoes belonging to the genus Culex transmit filarial elephantiasis, and Culex fasciatus is now alleged to transmit yellow fever, it does not appear extreme to advance the view that physicians should know something about the breeding habits of these insects. It is not the intention to try to introduce abstract zoologic work into medical colleges, but when we consider how often patients are treated for worms when they have none, and how often they have some which for a long time escape diagnosis it seems justifiable to suggest that if medical students were taught how to distinguish the eggs of various orders by a microscopic examination of the feces, the liability to error in diagnosis would be diminished.

The time will probably never come when our professors of practice will think it best not to discuss malaria, dysentery, trichinosis, and other diseases associated with animal parasites, and we should in fact be opposed to having the clinical side of these maladies turned over entirely to zoologists. Still, the subject of practice is so broad that no one man—not even an Osler—can hope to keep up to date in the entire literature bearing on all its phases. By common consent the chair of practice surrenders the phytoparasites to a botanist or a bacteriologist, and my contention is that if our medical schools are to keep abreast of the times in practice, pathology, and hygiene, the subject of animal parasitism should be treated in a special course, by a special man, preferably by a professional zoologist, if the services of one who has worked in the groups in question can be obtained, otherwise by a physician who has had a general zoologic and special helminthologic training.

Such a course as outlined above should be allotted between twenty and thirty lectures and at least three laboratory exercises, although under pressure the field may be covered—though with less satisfaction to the instructor—in about eighteen lectures.

ANTIPNEUMOCOCCIC SERUM TREATMENT OF PNEUMONIA, WITH REPORT OF CASES.*

G. E. TYLER, M.D.

Secretary Colorado State Board of Health; Adjunct Professor of Medicine, Gross Medical College; Visiting Physician to St. Anthony's Hospital and to the Arapahoe County Hospital.

DENVER, COLO.

DISCOVERY.

In 1888 Netter rendered mice and rabbits immune to pneumonia by injecting them with a fluid prepared from the dried spleen of infected animals. Later he used an old pneumococcus pleuritic exudate, and still later the sputum of a pneumonia patient after the crisis.

Foa was able to produce, in animals, an immunity lasting several months, by injecting a serum made by a precipitation of a bouillon culture of the pneumococcus with ammonium sulphate and repeated filtration. His method was to inject the filtrate intravenously into rabbits for three or four days. Later he made an extract of the muscles and viscera of a rabbit, dead of pneumonia; precipitated it in the same way, used it in the same manner, and was able to produce the same immunity; though a similar extract from a healthy rabbit produced no effect.

Klemperer Brothers experimented with a pneumococcus pleuritic exudate which was demonstrated, by cultural methods, to contain no living organisms. They injected two rabbits with 20 c.c. each, and fourteen days later they inoculated both these animals with a virulent culture of the pneumococcus. Both survived, though the control animal died. They also succeeded in rendering dogs immune. Later they demonstrated the curative properties of the serum of animals rendered immune to pneumococcus infection.

Pane and De Renzi inoculated animals with the pneumococcus, and from them obtained a powerful antipneumonic serum. They submitted their results to the Medical and Surgical Academy of Naples, and this body, after repeated tests, declared the serum to be of great value. The harmless character of the serum was also established by the injection into men of 200 c.c. in twenty-four hours, without the experience of any inconvenience. The Klemperers advanced the theory that during the course of pneumonia there is developed in the blood a poisonous albumin called pneumotoxin, and that the system elaborates an antipneumotoxin, this latter substance causing the crisis. They were able to demonstrate the presence of the antipneumotoxin in the blood of pneumonia patients after the crisis; and they also succeeded in curing the disease in animals by the use of antipneumotoxin.

NATURE.

Vaughan considers that the action of the serum is antimicrobic and not antitoxic. McFarland says the nature of the serum is uncertain; it may be antitoxic or antimicrobic, probably antimicrobic. Lambert considers that it may be bacteriolytic in its action.

A. H. Smith says whether the antitoxin is the product of the pneumococci or is simply the result of changes going on in the leucocytes, preparatory to their disintegration, is not yet determined. Smith also cites an observation of Pinna that the pus obtained by injecting turpentine into the cellular tissue of a man, the pus being proved absolutely sterile, had the power, when injected into rabbits, of rendering them immune to inoculations with pus containing pneumococci, though the unprotected animals inoculated in the same manner died of pneumococcus septicemia within thirty-six hours. Smith adds: "It would appear from this that the pus itself, apart from any microbic action, possesses antitoxic properties."

Tizzoni claims that the serum is not only protective against the pneumococcus, but that it protects against reaction to small fatal doses of the tetanus bacillus, while on the other hand the tetanus serum renders the animal less susceptible to pneumococcus infection, and McFarland cites an instance where it protected against the streptococcus.

It may safely be concluded that antipneumotoxin is not a bactericide. The pneumococcus is not killed by contact with it. Instead, the organism multiplies, de-

* Read before the Denver and Arapahoe Medical Society, Feb. 12, 1901.

velops, and retains its virulence under these conditions. On the other hand, the antipneumococcic serum, when injected into animals, prevents the development of symptoms due to the formation of pneumotoxin. If pneumotoxin alone be injected into a rabbit, it causes rise of temperature, toxemia, and death from general pneumococcus septicemia; but if the pneumotoxin be mixed with antipneumococcic serum and injected, no rise of temperature nor other symptom develops. It is probable, therefore, that the serum does not prevent the development of pneumotoxin, but that it either renders the pneumotoxin inert through chemical processes or else it counteracts its effects.

PREPARATION.

Some experimenters have used a glycerin extract of the muscles and viscera of immune animals. Others have obtained the serum direct from different animals. That the different methods of preparation influence the result to some extent is proved by the observation of Lara, who stated that the serum from dogs caused nervous excitement, while that from rabbits produced general agitation and a temporary aggravation of the disease. It is therefore important to determine what method is used in the preparation of the serum employed, in order to properly interpret the effects reported.

Washbourn used essentially the same method as that employed in producing diphtheria antitoxin. A pony was inoculated with cultures of the pneumococcus, for three months. At the end of this time the animal was found to possess marked immunity. In order to increase the virulence of the pneumococcus Washbourn devised a special method of culture and kept the culture in an incubator at 37.5 C. for sixty-six days, and he states that the serum may also be accurately standardized.

McFarland states that the same process applies to the manufacture of the antipneumococcic serum as applies to the manufacture of diphtheria antitoxin, except that it is necessary to cultivate the pneumococcus by a special method. He first injects virulent bouillon cultures which have been killed by heating to 60 C. for one hour. After the horse has stood injections of increasing doses, living cultures are given in increasing doses until the horse no longer reacts. The protective character of the serum is demonstrated against living organisms injected into rabbits. Then the horse is bled, the serum is treated with trikresol and in this shape it is put upon the market.

REPORT OF CASES.

Lara reported the results of 10 cases treated prior to Dec. 2, 1892; 5 were cases of double pneumonia, 5 single; 8 were young persons, 2 were advanced in years; 6 were robust, 4 debilitated. He employed different sera; in some cases using that from immunized rabbits; in other cases from dogs, and in still others the glycerin extract of the viscera; no local reaction followed any injection. The rate of the pulse was unchanged, but its character was altered. There was no immediate change in respiration, but after a time it became slower. In every case the crisis occurred from the third to the fifth day; convalescence was rapid and complete and the complications were rare and of little gravity. In all but three cases reduction of temperature followed the injection. Lara was encouraged by the results.

Oct. 31, 1896, De Renzi reported 16 cases, 2 of whom were treated in 1894-95, both recovering. During 1895-96, 12 recovered and 2 terminated fatally. Feb. 27, 1897, Washbourn reported 1 case of his own who recovered and 1 case of Pye-Smith, also with recovery. April 18, 1897, Spurrell reported 1, the patient dying. May 22, 1897, A. Cooke reported 2 cases, both of whom recovered.

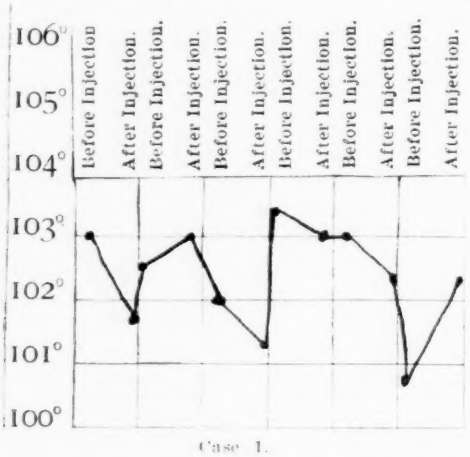
On the same day Harnett reported 1 in an alcoholic, terminating in recovery. Dec. 25, 1897, Washbourn reported 6 cases, all terminating in recovery. Jan. 30, 1898, Pane reported 9, of whom 8 recovered and 1 died. He stated that in the 8 patients who recovered, rapid improvement followed the use of the serum, and there were no ill effects. During 1898 De Renzi reported 10 additional cases, all of whom recovered. Feb. 15, 1898, Weisbecker reported 21 with 19 recoveries and 2 deaths. He stated that the results were most striking, there being a notable change for the better in the patient's general condition. Of the 2 fatal cases, 1 was due to emphysema and the other patient was 78 years old. May 7, 1898, Fanoni reported 1 case treated with De Renzi's turkey serum, with recovery. In October, 1898, Marsalongo and Franchini reported 10 cases with 7 recoveries and 3 deaths; the three fatal cases being alcoholic subjects. Aug. 26, 1899, Fanoni reported 5, with 4 recoveries and 1 death. The fatal case was a female patient, and her death should not really be attributed to pneumonia, as she was in full convalescence when pericarditis or endocarditis developed, causing her death. In March, 1890, Canby reported 4 cases, all of whom recovered, 1 being his own case, 1 a patient of Dr. Frey, and 2 patients of Dr. Everhart. April 14, 1900, Lambert reported 12 cases of his own, with 9 recoveries and 3 deaths; he also quotes Bozzolo as having treated 5, with 4 recoveries and 1 death. Lambert's experience with Pane's serum was unfavorable, but he states that this was probably due to the fact that the serum was old; he then substituted serum from horses and had better results. He states that the serum does not seem to have any effect on the process in the lungs nor to hasten the crisis, but that in certain instances it does prevent the development of a pneumococcus septicemia; and in these cases it may save life. Sept. 8, 1900, J. C. Wilson reported 18 patients treated at the German Hospital, Philadelphia, the usual treatment at the hospital being given simultaneously: 2 were women and 16 men; the youngest was 15, the eldest 48; all were working people and most of them were occupied up to the time of the attack. Of the 18 patients, 14 recovered and 4 died. Wilson used small doses at first, but later increased the amount given. He calls attention to the great increase of leucocytes following the injection of the serum. In the discussion of this case A. O. J. Kelly reported 1 of double pneumonia treated with the serum terminating fatally; but he states that the case was considered hopeless when the serum was begun, and that the supply of serum gave out some time before death ensued. He also states that marked increase of leucocytes followed each injection. McFarland reports, during the year 1900, among others, 1 patient treated by Rochester, with recovery.

The cases which I report were all treated at the Arapahoe County Hospital, during the fall of 1900. Other treatment was employed simultaneously, consisting of ice-pack to the chest, strychnia, alcohol, and digitalis as needed and oxygen in desperate cases.

CASE I.—R. C., a white laborer, 45 years old, was admitted Sept. 26, 1900, with acute alcoholism and pneumonia of the right upper and middle lobes, it being the eighth day of his illness. He had been without medical attention up to the time of his admission. The affected lobes were found consolidated. On September 27, the ninth day of the disease, serum treatment was begun, 20 c.c. being given subcutaneously every eight hours,

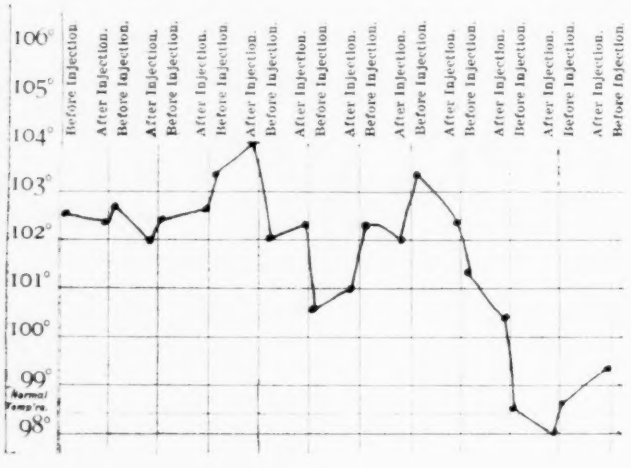
Unfortunately the supply of the serum gave out, there being no more in Denver at the time, so that he had but six doses, the last being administered the morning of September 29; the patient died the morning of September 30. Later arrangements were made for a systematic test of the serum, and it was administered to every pneumonia patient admitted to my service, from October 25 to November 25, regardless of the general condition of the patient or the stage of the disease; 20 c.c. of Mulford's serum being given subcutaneously every six hours.

CASE 2.—J. C., a white teamster, aged 39, was admitted Oct. 25, 1900, the second day of the disease. His family history was negative, and he gave a personal history of pulmonary hemorrhages in 1883. The right upper lobe was consolidated. Serum was begun October 26, the third day of the disease. He received eleven doses of 20 c.c. each at intervals of six hours. The crisis occurred the fifth day of the disease and convalescence was rapid.



Case 1.

CASE 3.—F., an insane man about 50 years old, had a chill and severe sharp pains in the right chest during the night of November 3. He was transferred to my service and I saw him the morning of November 4. There was slight dulness and diminished respiratory sounds over the lower right lobe.

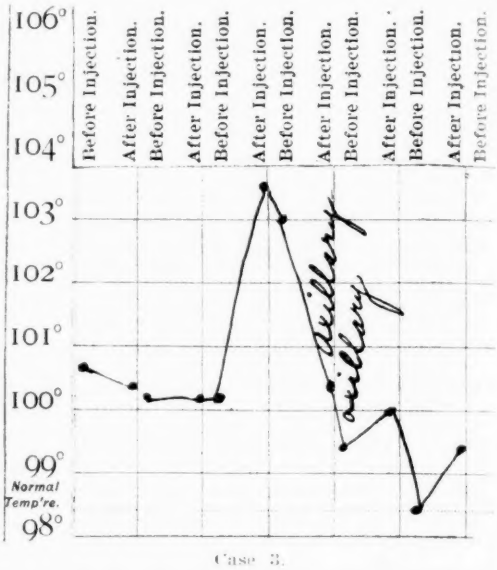


Case 2.

The next day there was increased dulness with bronchial breathing. The serum was begun during the first twenty-four hours of his illness, and he had six doses of 20 c.c. each. The crisis occurred the third day and convalescence was rapid.

CASE 4.—M. St. C., a negro woman, 19 years of age, a morphin habitue, was admitted November 11. Because of the unreliable character of her testimony, no history could be obtained. I first saw her on November 12. Both lower lobes were consolidated, with flatness, tubular breathing and exquisite pectoriloquy. She had fourteen doses of 20 c.c. each, at intervals of six hours, this treatment being begun the day of her admission. The crisis occurred the fourth day she was in the hospital, though it was not typical, and there were some fluctuations of temperature thereafter. She made a good recovery.

CASE 5.—T. G., a white woman, 18 years of age, with constitutional syphilis, was admitted November 19, the fifth day of the disease. The right lower and middle lobes were consolidated. The serum was begun the fifth day of the affection

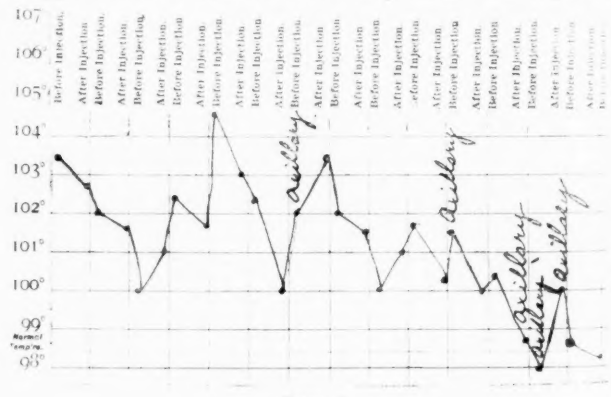


Case 3.

and she had twenty doses. No crisis occurred. A septic arthritis developed, affecting the left elbow, and she was transferred to the surgical ward. At this time she had practically recovered from her pneumonia, but I saw her about six weeks later and discovered evidence of softening of the right lung.

CASE 6.—J. B., a white male cook, aged 22, was admitted November 21, the 5th day of the disease. The lower left lobe was consolidated. Serum was begun at once and he received eight doses of 20 c.c. each. The crisis occurred the sixth day of the disease and convalescence was speedy.

The appended charts show the effects of serum on the temperature. Aside from any objective symptoms there was lessening of dyspnea, and often the patient dropped into a comfortable sleep after the injection.

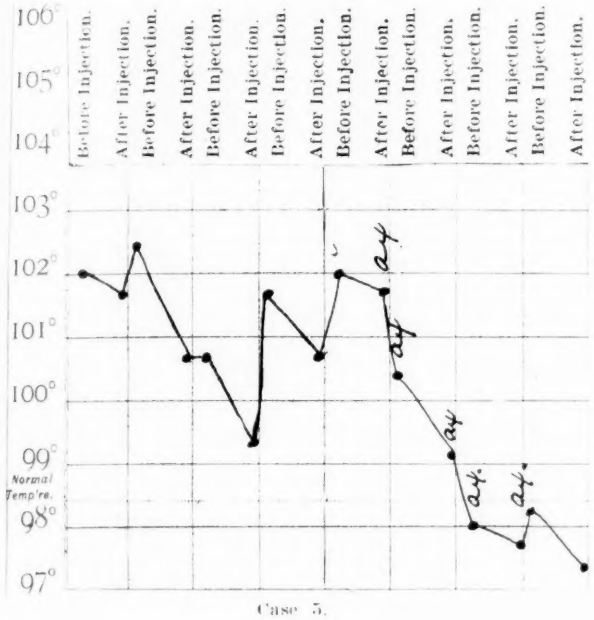


Case 4.

In no case did a general toxemia develop. In one case (No. 5) there was considerable local irritation at the seat of injection.

It will thus be seen that I have collected, including my own, 141 cases treated with antipneumonic serum of some sort, with 121 recoveries and 20 deaths, a mortality of 14.18 per cent. In those cases where I have had access to the original report, I have especially studied the fatal cases. Weisbecker had 2 deaths, one being emphysematous and the other 78 years old. Marsalongo and Franchini had 3 deaths, all alcoholics.

Fanoni had 1 death, but it was from cardiac disease after convalescence was fully established. Of Lambert's fatal cases, 2 were alcoholics. Of Wilson's, 1 died on the third day, the entire right lung being solid; 1 had been ill with la grippe for two weeks; 1 was an alcoholic, the left lung being entirely solid, and death occurred on the fifth day; the other patient weighed 200 pounds and was addicted to malt liquors. Kelly had 1 death, but as an alcoholic considered hopeless before serum was



Case 5.

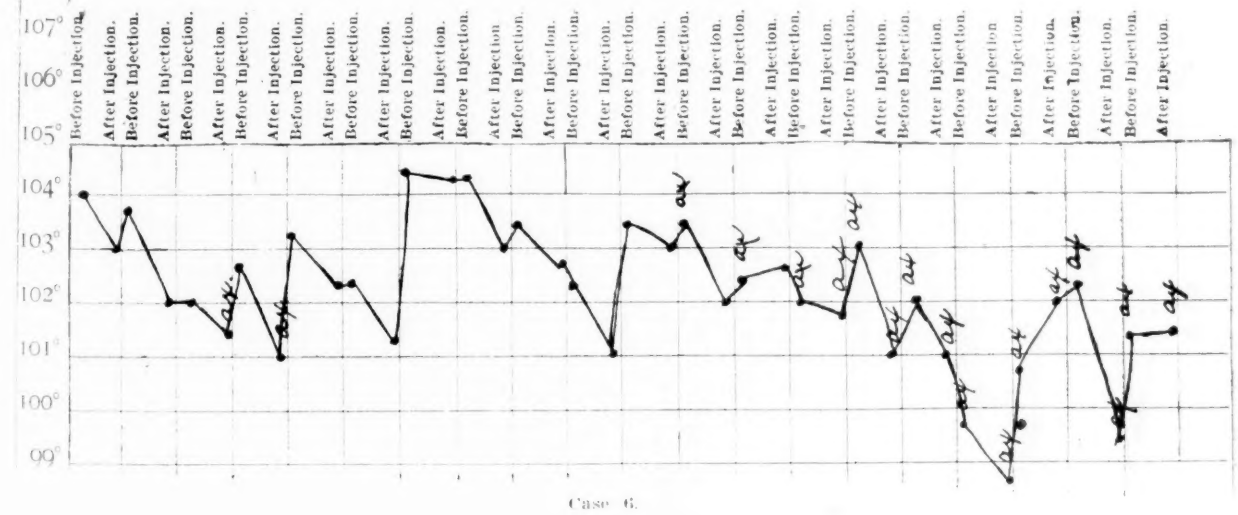
administered, and the supply of serum gave out before death. My one death was in a patient with acute alcoholism, no treatment at all being instituted until the eighth day.

In attempting to estimate the effects of the serum, least, if not all the cases just mentioned ought really to be excluded. If these be excluded, we have 127 cases,

REPORT OF CASES TREATED WITH ANTIPNEUMONIC SERUM.

Bibliography number	Reporter.	Number of cases.	Recovered.	Died.	Remarks.
12	Lara	10	10	0	
12	Bozzolo	5	4	1	
8	De Renzi	16	14	2	
12	Washbourn (& Pye-Smith).	2	2	0	
10	Spurrell	1	0	1	
9	Cooke, A	2	2	0	
11	Hartnett	1	1	0	
12	Washbourn	6	6	0	
14	Payne	9	8	1	
4	De Renzi	10	10	0	
15	Weisbecker	21	19	2	One had emphysema; the other was 78 years old.
13	Fanoni	1	1	0	
16	Marsalongo and Franchini.	10	7	3	All 3 who died were alcoholics.
17	Fanoni	5	4	1	Death due to heart disease after convalescence.
20	Canby (Everhart & Frey).	4	4	0	
22	Lambert	12	9	3	Two who died were alcoholics.
12	Wilson, J. C.	18	14	4	
12	Kelly, A. O. J.	1	0	1	Hopeless before serum was begun.
6	McFarland (Rochester.)	1	1	0	
	Tyler	6	5	1	Fatal case was a neglected alcoholic.
		141	121	20	

the blood from about the third day to the fifth day of the disease, and that prior to that time there are no pneumococci in the blood, and if it be true also that the advent of the organisms into the blood marks the beginning of the toxemia or septicemia, these facts furnish a rational explanation of the effects of the serum when begun early.



Case 6.

with 6 deaths, a mortality of 4.7 per cent. In view of the different sera used, especially when the difficulty of producing and keeping a good antipneumonic serum is considered, this seems to me an excellent showing.

Wilson, Kelly and others have called attention to the increase of leucocytes following injections of the serum. As absence of leucocytes in pneumonia is considered of grave prognostic import this is good corroborative evidence of the value of the serum. Unfortunately, in my case, no blood counts were made.

I have found no statement of the effects of the serum on the chlorids in the urine. It is to be hoped that subsequent observers will study this also.

The thing which most impressed me during my observation was the complete absence of toxemic symptoms. If it be true, as is claimed, that the pneumococcus enters

Osler mentions toxemia as *the* important prognostic factor, and it is one of the most, if not the most, important item in determining the outcome. It is my opinion that if fresh serum in large quantities be given before the advent of the pneumococcus into the blood, it will prevent the development of toxic symptoms. This also coincides with the results of animal experimentation. Animals inoculated with the pneumococcus do not die

of pneumonia, but of pneumococcus septicemia; and as is well known, the results of animal experimentation are extremely encouraging.

It is exceedingly doubtful whether antipneumonic serum has any effect on the condition of the affected lung. The exudate is extracirculatory, the vascular supply being cut off. It is therefore almost inconceivable that the serum should have any effect on it, except possibly to prevent the involvement of new areas. But if we have a serum which prevents and combats toxemia, as I believe we have, that is a great advance.

Several problems of much importance yet remain to be solved. The standardization of antipneumonic serum, so essential to accurate dosage, the easy cultivation of the pneumococcus in such a way as to prevent loss of virulence, the concentration of the serum to permit smaller dosage and the reduction in cost of production so essential to its popular use, all these are yet in the future.

DISCUSSION.

DR. J. N. HALL—I saw all of the cases and in addition have seen one or two others, notably one with Dr. Holmes, which I report with his permission, a case where a pneumonia supervened upon an old standing phthisis, and in that case the result was fatal. It was due, however, rather to the phthisis than to the pneumonia. I have not as yet been convinced of there being any great therapeutic effect in this serum, still I think it is a lead which is well worth following. I am rather prejudiced against the general proposition that the pneumococcic serum will be of much value, because of some preconceived notions, and yet I am open to conviction. It is well known that pneumonia is not a disease uniformly due to the same organism. Something like four-fifths of the cases are due to the pneumococcus, while in the remaining Fraenkel's bacillus, the streptococcus and various other organisms are found. In very many of the cases of la grippe pneumonia, as is well known, a mixed infection is present. We are in much the same position as regards pneumonia as we were in regard to diphtheria before the bacteriologic differentiation of the disease. In those days we called all cases of false membrane in the throat diphtheria, whereas we now know that many of these are due to a streptococcus infection. It is only in the diphtheria pure and simple that the diphtheria antitoxin is of much value. If we had the means of knowing absolutely the bacteriologic diagnosis in our cases of pneumonia, we should have a better opportunity for estimating the true value of the pneumococcic serum. As in the use of streptococcic serum in puerperal fever, it is essential that we should know the exact organism causing the symptoms before we can hope to form just estimate of the value of the remedy.

I have seen within six days six cases of diphtheria and three of streptococcic sore throat, all having much the same clinical appearance. Before the days of the use of the diphtheria serum, if such a thing were possible as that the remedy could have been injected, we should have been completely mystified because of the good effect which it had on certain of these cases, and the absence of any effect in others. Therefore, as I say, I do not feel that we can very justly estimate the value of this serum, because we can not tell how many out of the 141 cases reported by Dr. Tyler were due to a pure pneumococcic germ. It is perfectly possible that all of these that recovered were due to that. In that case we should have a very high estimate of the value of the serum, and we should be all the more diligently led to study to find a serum which we may use for the other cases.

Furthermore, we should bear in mind that in pneumonia it is more difficult to give an exact prognosis than in almost any other disease. We occasionally see patients who, by all rules of prognosis, ought to die, and yet they recover. In the report which I made a few years ago before this society, of all the cases of acute lobar pneumonia which I had seen in private practice, every patient over 70 years of age, much to my surprise, had recovered. A week ago I saw, with Dr. Hawkins, a case in a young woman so desperately ill that we both agreed that her prognosis was entirely hopeless. She had not been treated with the vigorous stimulation which we commonly use in these cases, yet when it was adopted she promptly recovered, being out of danger in forty-eight hours. Where such cases as these quoted may be seen, the difficulty of prognosis is evident. Finally, there is sufficient encouragement in the use of this serum to lead us to strive more diligently than ever to find a treatment of the disease which, with more accurate bacteriologic diagnosis, shall give us such results as we have already seen in the treatment of diphtheria.

DR. A. M. HOLMES—Dr. Tyler's subject is an important one. I have had very little experience with the antipneumococcic serum, having used it in but one case. The case referred to was by no means a favorable one for a test. For several years the patient had been afflicted with phthisis. Pneumonia developed after exposure and had been in progress for several days when I first saw him. Dr. Hall was kind enough to see the patient with me. As a last resort we decided to make use of the antipneumococcic serum, and we had an opportunity to carefully observe the effects. I should like to report a few points, many of which closely resemble those reported by Dr. Tyler. Other means of treatment were used in addition to the serum, oxygen being administered almost constantly. Wild delirium was present, accompanied by rapid pulse and very little fever. We injected 20 c.c. of antipneumococcic serum at intervals of four to eight hours. We observed improvement in the pulse, in the respiration, in the delirium and the restfulness of the patient soon after giving each injection, but the improvement was only of short duration; the case terminated fatally at the end of one week after we began the serum. A bacteriologic examination of the sputum was made when we first saw the patient; numerous pneumococci, tubercle bacilli and other germs were found. Several days after we had been giving the serum another examination of the sputum was made and the pneumococci were not found, but the tubercle bacilli were present. The blood examination revealed a slight increase in leucocytosis, which soon diminished. There were no bad effects that could be ascribed to the serum. The patient himself frequently remarked that he felt better after receiving the injections. When administering antipneumococcic serum it should be fresh, be commenced early in the course of the disease, and be given in large doses and at short intervals. From my limited experience I am of the opinion that antipneumococcic serum possesses sufficient worth to justify further use.

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HOW TO TREAT MUSCULAR AND JOINT SPRAINS OF RAILWAY EMPLOYEES.*

HALDOR SNEVE, M.D.
CHIEF SURGEON, CHICAGO GREAT WESTERN R. R.
ST. PAUL, MINN.

Joint and muscular sprains differ, so far as I know, not the slightest from the same affections in other occupations, but the same justification that obtains in calling railway surgery a special branch of surgery will allow of the use of the title of this paper. Sprain of some sort or another is a very common accident among railway employees. This is perhaps due to the fact that so many of them, in the discharge of their duties, are forced to run backward and forward, work on machinery in constrained positions, do heavy lifting, and are exposed to falls from heights. In order to form an idea of how frequently such accidents affect railway employees, I have prepared a table of the sprains and strains of all kinds, reported as such to my office, occurring on the lines of the Chicago Great Western for the year 1899:

SPRAINS AND STRAINS OF CHICAGO GREAT WESTERN R. R. EMPLOYEES, 1899.

Firemen.

CHARACTER OF INJURY.	No.	CAUSE OF INJURY.	No.
Thumb	2	Falling down	17
Wrist	4	Shaking grates	3
Shoulder	4	Muscular exertion	3
Lumbar	5	Collision	1
Foot and ankle	2		
Knee	2		
Hip and thigh	3		
Forearm	1		
Side	1		
	24		24

Brakemen.

	No.		No.
Shoulder	3	Arm twisted	1
Knee	2	Muscular exertion	1
Arm	1	Falling	7
Elbow	1	Turning foot	2
Foot and ankle	5	Lifting	2
Lumbar	2	Collision	1
	14		14

Engineers.

	No.		No.
Lumbar	5	Switching	1
Wrists	2	Wreck	1
Leg	1	Falls	5
Elbow	1	Arm Caught	1
Thumb	1	Collision	1
		Tank tipped	1
	10		10

Section Hands.

	No.		No.
Inguinal region	1	Struck stove	1
Foot and ankle	2	Falls	4
Abdominal muscles	1	Collision	2
Wrists	3	Turned foot	1
Knee	1	Lifting	2
Neck	2		
	10		10

Miscellaneous.

	No.		No.
Knee	2	Falls	18
Wrist	6	Muscular exertion	2
Side	2	Scuffling	1
Ankle and foot	13	Caught foot	4
Lumbar	6	Lifting	2
Leg	2	Turning foot	5
Finger	1		
	32		32

It will be seen from the table that, as far as occupation is concerned, the greatest number injured, strangely enough, were firemen, to the number of 24.

We would have expected *a priori* that the number of sprains would have been greatest in the brakemen, who are continually climbing over cars and running backward and forward along the train, but the number of these so injured was only 14. Next were engineers and section hands, 10 each, and finally all other occupations, switchmen, machinists, wipers, carpenters, etc., to the number of 32, making a total of 90 cases reported to my office as sprains or strains, out of a total of 622 accidents for the year 1899. The percentage of sprains and strains to the total is 14.45.

The character of injury in all these cases has been sprains or strains of fingers, wrist-joints, shoulder-joints, foot and ankle, knee, hip and thigh, arm, back and side. By far the largest number of sprains reported were of the ankle and foot, 22 cases out of 90. Wrists were sprained 15 times. In all the cases of strains, by far the greatest number were of the back, or, as I have tabulated it, of the lumbar region, a total of 18 cases. It appears that engineers hurt their backs, brakemen their ankles, while the firemen sprain backs, wrists and shoulders indifferently.

The cause of injury shows a preponderating number due to slipping and falling, resulting in injuries to the wrists and ankles especially. The total number of cases due to falling is 51. Various sorts of muscular strains resulting from muscular exertion were present in 9 cases.

The percentage of sprains and strains in a total of 622 cases being 14.45, these are therefore frequent accidents among railway employees, and six years of experience in railroad work leads me to believe that these are precisely the injuries which lay up the employees the greatest length of time, and the object of this paper is to show how the time of recovery can be shortened, in my opinion at least 50 per cent.

What do we mean by sprain? The definition of Dr. Douglas Graham is a very good one: "A sprain is a sudden partial displacement of two joint surfaces followed by immediate replacement." A strain is a stretching of the tissues beyond their normal limits, resulting in rupture of some of the tissue elements. These strains may affect any of the tissues, but do not, in my opinion, ever occur in ligaments.

Dr. P. S. Conner, Cincinnati, teaches that ligaments are made up of white fibrous tissue which is absolutely inelastic, and therefore can not stretch; at the same time it is so strong that it is easier to pull it from its attachments in bone or muscle—tendon—than to rupture it. A writer in Gerrish's Anatomy says that a little reflection will teach us that if tendon could stretch then our muscular efforts would be wasted on the elasticity of the medium between muscle and bone. Morris' Anatomy also teaches that white fibrous tissue is incapable of stretching. I mention this particularly because the term "stretching of the ligaments," especially as applied to the ankle-joint, is used so frequently and so loosely. In a very few instances postmortems after

* Read at the annual meeting of the Academy of Railway Surgeons, held in St. Paul, Minn., Sept. 5 and 6, 1900.

injuries of joints have been made which would seem to indicate that ligaments can rupture, but experimental work has shown that it is easier to pull off a scale of bone at the attachment of the ligament than to rupture the ligament, i. e., in ligaments other than thin fascial expansions, and I believe, owing to the absence of elasticity in the ligament and its great strength, that such accidents as rupture almost never occur. Therefore, when surgical writers speak of stretching and rupturing ligaments it means one of two things: the stretching and rupturing of connective tissue, the areolar tissue, blood-vessels, etc., or it means the tearing off of a scale of bone at the attachment of the ligament involved. The last is what generally occurs in very severe sprains of joints. So much for the pathology.

TREATMENT.

From the earliest times war has been waged as to what constitutes the proper treatment of a sprain, especially as regards sprains of the ankle-joint. On the one hand, there have been those who contend that what a joint needs after an injury is rest, and the more absolute this rest can be made the quicker recovery ensues. The adherents of this idea elevate the limb affected, put it up in immovable dressings, and wait around until the rest and dressings have resulted in the disappearance of swelling, which requires from fifteen days to three months; then the patient is requested to walk around and use his leg so as to make it strong again. If the patient has been laid up two or three months he finds himself unable to follow the surgeon's advice, as his limb is weak and walking painful and difficult. What has occurred? We know that immobility of a joint induces passive inflammatory changes, leads to the disappearance of the synovial fluid and roughening and thickening within the joint. On the muscles this so-called rest cure has produced atrophy and possibly contraction. The fat and other tissues forming the pads around the ligaments and tendons have been absorbed, and we find a preternatural immobility in our joint.

Adherents of immediate motion apply bandages or adhesive plasters and encourage their patients to get around immediately after the injury. At the present time there is a large class who endeavor to skim off the cream of both contentions. They keep their patients perfectly quiet for a few days with immovable dressings, and then advise massage and motion. The results have been much better, as regards the time required for recovery and the strength of the limb, with the last-mentioned treatment, than with the so-called absolute rest treatment.

To have a correct idea of how to handle these cases in order to promote speedy recovery, we should bear in mind the few points I cited regarding the pathology and, further, the surgical indications. There are perhaps very few sprains of the joints which are not accompanied by contusion of the joint surfaces. The tearing of the areolar tissue and the rupture of the small blood-vessels, results in a rapid, painful exudative swelling and discoloration, for which the first surgical indication is rest, but the question immediately arises: What is rest for these involved tissues? Ranke rinsed out the vessels of fatigued muscles with a normal saline solution, which immediately restored them to full vigor; the experiments of Zabludowski have shown that muscles exhausted by faradization could be restored at once by massage: Maggiora showed that massage of muscles fatigued by mechanical labor quickly restored them to normal function. What do these experiments mean? They mean that the muscles are constantly functionating, even when a limb is immobilized; the muscles are in a state of tonic contraction, and fatigue simply means a heaping up of the waste products resulting from the work of the muscle cells, such as lactic acid, creatin, carbonic acid, acid phosphates, and perhaps toxins, and *rest for muscle means the getting rid of these waste products and the furnishing of new oxygen and new food from the blood.* We know that immobilization produces atrophy and contraction of the muscles, and knowing what the physiology of muscular rest is, it must be plain to every one of us that rest does not mean to confine a limb in a dressing which does not permit of motion of the muscles. On the contrary, rest for the inflamed, contused, torn and otherwise involved tissues does mean immobilization. The next indication to be made is the antiphlogistic one. How can we limit excessive leucocytosis and inflammatory exudation? The application of cold water and evaporating lotions fulfils these indications. In cases where there has occurred a rupture of the attachment of the tendon or ligament with its scale of bone, practically a fracture, an indication arises for the maintenance of a proper position in order to allow of union. Now, how are we to fulfil all these indications for treatment, some of them which seem paradoxical, i. e., both motion and immobilization? The muscles involved in every sprain should have motion all the time in order to allow muscular contraction to exert its pump action on the lymph-vessels which carry away waste products whose presence produces fatigue and pathologic changes.

The contused joint surfaces should at the same time be immobilized, providing the contusion and laceration is very severe. The index to the severity of such an injury will be found in the amount of pain and nausea experienced, and the amount of swelling. Discoloration of the skin is not an index of the amount of injury. We can elevate the limb affected, apply a wet cheesecloth to the swollen joint, and over this an ice-bag during the first few hours or days until we attain to the height of the inflammatory process resulting from the trauma. Motion can at the same time be administered to the muscles passively, by means of massage, which produces for these purposes precisely the same changes as active muscular action, and besides carries away the waste and inflammatory product in the lymph and venous blood. In all sprains of moderate severity both massage and active use of the limb can be instituted immediately or after a few hours.

In a case of the ankle we should apply an elastic cotton bandage firmly to the limb, or leave on the shoe in the case of the ankle, lacing it up, and encourage our patient to walk the sprain away. On retiring, the patient can have massage treatments, and hot applications or a local wet pack. The massage should be begun as soon as possible after the injury. It should be administered by a skilled masseur and should consist of centripetal strokings and kneadings, and extremely light frictions and strokings over the inflamed area, the last being designed to favor the centripetal circulation and the spreading out of waste products in the tissues so that they can be the more easily absorbed by the lymphatics.

After the acute symptoms have subsided, hot applications are the best because they dilate the superficial vessels and promote local circulation, which assists in carrying away the inflammatory products. Since fractures or displacements frequently occur in the region of the ankle-joint, and as the inflammatory symptoms are usually more severe in these cases, we will at times

be forced to keep our patient quiet for several days, using ice-bags and massage, before we can put on the bandage or Gibney's plaster bandages, and put the patient on his feet. It is astonishing to the surgeon how quickly the patient can get over the sprain, if compression be put on the joint and the patient receives massage and gets about. I know a recent case where the plaster dressings and rest were used in a sprain of the ankle and foot, where two years and six months were required to put the patient on his feet without crutches and appliances at his ankle, and I feel sure that had this patient been treated properly along the lines mentioned in this paper, only a few months would have been required at the utmost. As it was he was in almost useless condition at the end of two years and three months. The muscles of his leg were atrophied, there was too much motion at the ankle-joint, and the patient was fearful of putting his weight on his leg, and complained of getting tired quickly, and of pain in the whole limb. Systematic massage, use and encouragement sufficed in a short time to remove all this disability. In these old cases, besides the measures referred to, the use of the Scottish douche is good, that is, hot and cold water applied alternately. It is of great value in promoting recovery. Swedish gymnastics, in the shape of active and passive movements of all the joints of the limb affected should be used, in conjunction with other measures. In the vast majority of sprains of the ankle, the ambulatory treatment is very satisfactory. The average time required for recovery will be from six to twelve days. In 400 cases it was nine days. (Douglas Graham.)

A muscular strain of considerable severity will show to the palpating finger an elevation of ruptured muscular fibers. In these cases a little gentle massage will promote speedy recovery. In a vast majority of so-called muscular strains, there will be no elevation to be felt by the palpating finger, and in these cases the cold douche, and static electricity both for its local and mental effect, gives remarkable recoveries.

To recapitulate: 1. Ligaments are rarely if ever torn in so-called sprains, and are never stretched. 2. The pathology in the majority of sprains is a rupture of the areolar and connective tissue around the joint, and a contusion of the lining of the joints. 3. Immobilization of muscles is not rest. On the contrary, in all sprains the muscles should have passive exercise the first few hours, and days, and active exercise after that. In the majority of cases active exercise should be instituted from the beginning. 4. The plaster casts should not be used at all, even in cases where we have a fracture, unless it be impossible to maintain a proper position of the joint. 5. Hydrotherapy in the shape of ice applied over a wet cloth the first few hours; water in the shape of hot fomentations or in the shape of the Scottish douche, where we wish a stimulation, is of very great value. 6. The counter-irritation of static electricity in conjunction with massage is the best treatment for a strain. 7. The ambulatory treatment of sprains in conjunction with massage is to-day the best treatment.

Statistics of Quebec Province.—There has been evidently a marked falling off in the ratio of increase of the population in the province of Quebec during the last decade. In the report of the board of health for the year 1900, the recorder of statistics estimates the increase in population between 1898 and 1899 only 2.5 per cent. The large centers of population have gained most, but the aggregate for the whole territory being slight it would appear that in the rural districts here as elsewhere there has been possibly some local actual decrease.

DIAGNOSIS AND SYMPTOMATOLOGY IN THE APPENDICITIS OF CHILDREN.*

THOMAS H. MANLEY, PH.D., M.D.

Visiting Surgeon to Harlem Hospital; Professor of Surgery in New York School of Clinical Medicine

NEW YORK CITY.

So much has been published in medical literature of late on the subject of appendical inflammation, that it might seem but little remained pertaining to it to be further elucidated.

The operative technique in its surgical management has nearly advanced to perfection, so that in properly selected cases, and utilized at the proper time, surgical intervention in skilled hands should be followed by only a very low mortality. The greatest difficulty which confronts the surgeon is not so much how the operation shall be done, as the question of properly interpreting symptoms, locating the precise seat of pathologic changes and appreciating the character of existing complications.

THE GENERAL AND SPECIAL CHARACTERS OF APPENDICITIS IN EARLY LIFE.

In 1827 Melier first accurately described the pathology of appendicitis and recommended the excision of the appendix (*Mémoire et observations sur quelques maladies de l'appendice caecal*).[1] There was no echo to his publication until 1838, when the writings of Albus, Dance and Menière appeared. Although these authors approved of radical measures they maintained that the primary seat of lesion was in the cecum, as is maintained to-day by Treves. About 1888 the original observations of Sands, Fitz, and Talamon appeared, with the brilliant achievements of McBurney which settled beyond dispute the fact that in the great majority of cases the original lesion is in the appendix and that this organ must be primarily dealt with. On Friday, Dec. 30, 1887, the late Prof. Henry B. Sands, of New York, performed the first operation for appendicitis successfully after having first correctly diagnosed the condition existing. The patient was a male, 12 years old. The case had first been diagnosed as one of perityphlitis. He tells us that the child had indigestion, etc., and that there was no tumor.[2]

Weir, in 1887, was able to collect but 15 cases in which laparotomy had been performed for perforated intestine; the appendix was the seat of perforation or gangrene in 4 of these, although it was not discovered until after death. In 5 the appendix was found perforated, and removed, but all died.[3]

Appendicitis presents practically the same sexual difference in early life as is noted later in the adult; thus Jalaguier records 182 cases in his own practice, 4 were under 5 years; 42 from 5 to 6; 64 from 10 to 15; 25 from 15 to 20. There were 112 males and 70 females.[4] According to Bamburger's table, the relative frequency as to age was: Under 2 years, 2 cases; 15 to 20 years, 20 cases; 20 to 30 years, 32 cases; after 30 years, 17 cases. Fitz's table shows: 20 months to 10 years, 22 cases; 10 years to 20 years, 86 cases; 20 to 30 years, 65 cases; after 30 years 55 cases. Matterstock's table shows: Under 2 years, 2 cases; 2 to 5 years, 10 cases; 5 to 10 years, 25 cases; 10 to 15 years, 35 cases. Gordon's table reads: 2 to 5 years, 5 cases; 5 to 10 years, 33, and 10 to 15 years, 41 cases. Bruns' table says: 1 to 5

* Read by title, in the Section on Diseases of Children, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

years, 3 cases; 5 to 10 years, 20, and 10 to 15 years, 12 cases.[5]

It is curious to note that Dieulafoy, Bruns, and Faisans include heredity as a *cause appendicite familiare*.

In New York City, in 1899, there were 299 deaths from appendicitis, of which 63, or more than one-fifth, were in those under 15 years old, viz.: 1 year, 1 case; 3 years, 2; 4 years, 4; 5 years, 14; 10 years, 20, and 15 years, 22 cases. With a population of about 2,000,000, and assuming that 25 per cent. of it is under 15 years of age, the annual mortality would be 1 for every 7933.

Medical literature records but few cases of appendicitis in very young children and infants, except those which have been operated on. We have no data to show whether this disease ever occurs in the infant subsisting exclusively on the mother's milk, and there are but few cases recorded as occurring before dentition has begun or the infant has begun to masticate food. However, there are cases recorded of very early operation for appendicitis with varying results. The youngest patient operated on for appendicitis, on record, was one treated by Dr. Thomas A. Savage of New York, only 61 days old. A large perforation of the tip of the appendix was found. The infant sank the day following the operation.[6] Weiss operated for the same lesion on an infant 20 months old, with general peritonitis and death.[7] Mr. Miller saw a case of appendicitis in an infant 19 months old. The infant was at first costive and it was believed that he was suffering from follicular enteritis. On the fifth day of illness Professor Broca was called in, and laparotomy performed, evacuating a large abscess and exposing a rotten appendix. Good recovery followed.[8] In reviewing my own notes on appendical cases seen in hospitals, in consultation and in my own practice, I find 67 cases under 15 years old: 16 were operated on with 4 deaths; 5 were attended with advanced general peritonitis and died without operation. Forty-two others were seen; 6 very severe cases in which operation was refused, of which 2 died. Forty-six were of various types in which it was not believed that laparotomy was imperative; of these all recovered except two in tubercular patients under 9 years. There were 41 males and 26 females, the youngest 3 years old, the abscess bursting through the umbilicus. The ages were: 3 to 4 years, 1 case; 4 to 5 years, 4; 5 to 10 years, 27; 10 to 15 years, 35 cases.

With this experience of appendicitis in the young it is my conviction that although the causative factors remain obscure at this stage, as later, and the treatment should continue on the same general lines, there remains a wide difference in the diagnostic factors of the disease in childhood, and that its symptomatology, when anatomical deviations are absent, is more complex and more indefinite than in later life. Goodrich believes that children bear general septic peritonitis much better than adults. He has had several cases of general septic peritonitis in children, and has not lost one of them; as an instance he cites the case of a boy who entered the Long Island Hospital with gangrenous appendicitis, the peritoneal cavity being distended with a sero-purulent fluid. The appendix was removed, the peritoneal cavity washed with saline solution and "sewed up without a drain," rapid recovery following.[9]

My own experience fully confirms this view. Among the cases included in my own tables there were 2 of general peritonitis recovering. One was in a girl of 7 years, in a desperate condition: the distal half of the appendix had sloughed off, the distended paretic bowel protruded through the cut, and sero-purulent fluid flowed out from every direction. Shock was so great that no time was lost in systematic cleansing of the peritoneum. Recovery, though slow, was finally complete. The other patient was a boy of 5 years, with acute general peritonitis following appendicitis. The parents refused to permit an operation and, though a fatal prognosis was given, the little fellow made a good recovery. I am unable to find any statistics bearing on the relative mortality of laparotomy in the child and adult, although for many important reasons it should be lower in the former than the latter. Local complications should be fewer in early years; organic disease, senile changes or those constitutional or functional disturbances so common in middle or advanced age are not so frequent; moreover, it is well known that children bear the effects of pulmonary anesthetics with greater impunity than adults.

DIAGNOSIS.

The recognition of appendicitis should be easier during the early growth of the body than later.

Anatomical Features.—During the early childhood the pelvis is of narrower dimensions; evolution of the intestinal tract is incomplete, the large intestine is relatively smaller and all its segments are more mobile than after puberty. The position of the cecum is more indefinite, as at this time its attachment to the iliac fascia is lax, and this permits of a considerable range of motion in various directions. Jacobi has demonstrated how this species of enteroptosis acts as an aggravating factor in the constipation of infancy. The abdomen in childhood is rarely invested by a deep layer of fat, and hence the caput coli, when it has descended, lies superficially. As growth advances and the body develops, defecation becomes less frequent and the strain on the colon, in consequence of its capacity, becomes greater, and its position more fixed and definite.

Complications and Pathologic Conditions which May Obscure Diagnosis.—As contrasted with the adult, the pathologic conditions which may be confounded with appendicitis or mistaken for it in the child are few in number. The two most prominent are intussusception and tubercular peritonitis. It is curious to note, however, that even in childhood we can not fail to appreciate the importance of a critical abdominal examination and a search for other conditions which may in many respects, in the child as in the adult, simulate appendicitis. For example, at the British Medical Association's meeting held in July, 1898, Dr. J. Cromby reported 18 cases of floating kidney in children. The youngest child was 3 months old, the eldest 15 years; 16 were in females. Tuffier records 3 similar cases in children of 6, 9, and 10 years old.[10] What Dr. M. L. Harris, of Chicago, says of "Diagnosis of Abdominal Tumors" particularly applies to children in whom complex pathologic states are not yet in evidence. He observes: "Our knowledge must not be limited simply to normal anatomy, but we must know abnormal anatomy, or the anomalies to which the various organs are liable. For instance, the liver may occupy the left side of the abdomen instead of the right, and the location of all other organs may be reversed as well. The gall bladder instead of being retained against the inferior surface of the liver may be quite loosely attached to it, and thus possess quite a range of motion. The liver may possess 'accessory' or 'Schnur' lobes, which may appear as distinct tumors. There may be but one kidney instead of two, or the two may form a conglomerate organ

occupying the median position, or a kidney may occupy any location from the normal to the hollow of the sacrum, and may be fixed or freely movable. The intestinal tract is subject to numerous anomalies. The cecum and appendix may be found near the umbilicus or up under the liver, or they may be arrested at any point in their descent from the liver to their normal location in the iliac fossa. The appendix may dip into the pelvis lying against the uterus or the ovary and tube, or it may be extra-peritoneal, its tip reaching up to the kidney. The ovaries instead of occupying the lesser pelvis, may be retained in the lumbar region or descend into the labia. The uterus may be double instead of single and each half may vary in its degree of development. These are but a few of the anomalies which one must ever bear in mind when considering the diagnosis of abdominal tumor, and often an anomaly of location or development will lead to a correct solution of a case which would otherwise remain unsolved."[11]

Halle and Bernard[12] record a case of peri-nephritic abscess in an infant 18 months old. The mass was in the right side and was at first believed to be a case of encysted peritonitis with atypical appendix. Through the mistake in diagnosis, the author tells us, they made the incision for evacuation too far forward, and soiled the peritoneal cavity by the escape of pus into it. Menard cites the case of a girl 10 years old, who was suddenly seized with lameness in the right lower limb, from what was regarded as coxalgia in the beginning. As the case presented complex features and the limb was exquisitely sensitive, an anesthetic was given, before a critical examination was made. Then a mass was discovered deeply lodged in the right groin. A free incision was made into it, a large abscess opened and a necrotic appendix exposed. Recovery was rapid, with complete disappearance of all lameness.

Tubercular disease of the lumbar vertebræ is not uncommon in children, but the psoas abscess resulting in them usually follows the muscular sheath out under the crural arcade; however, Cathelin reports a case in which a psoas abscess was lodged in the right iliac fossa complicated with tubercular perforation of the appendix.[14]

Umbilical abscesses in young children are most frequently of appendical origin. One such case is recorded in my own group. At first the thin scar tissue of the umbilicus pointed and broke, giving issue to a copious purulent discharge; the day after, fluid fecal matter appeared in the opening. From the history of the case, the symptoms and the fulness which commenced at the border of the lowest rib and extended over centrally, it was thought that the appendix was the primary source of the trouble and that from its perforation a fecal fistula had begun. By a free incision the cecum was exposed, lodged high up and well forward. After cautious manipulation the root of it was secured, doubly closed with silk ligature and cut through. As the tissues were freely suppurating, a gauze drain was introduced. Recovery was tedious, but from the day laparotomy was done, discharge at the umbilicus ceased.

Wyeth records a somewhat similar case in a young man of 30. He died suddenly, of apoplexy. On autopsy the perforated, rotten appendix was found lying free in the abscess cavity.

Guiteras cites a case of abscess in a cystic terminus of the ureters, which have been diagnosed appendicitis. Mr G. W. Wright published notes of a case of chronic intussusception of the appendix in a child 2 years old. The tumor could be felt on a line with, and to the left of, the umbilicus. On incision, the root of the appendix was found invaginated into the cecum.[16]

Genito-urinary disturbances may lead to mistakes in diagnosis when a large, deep, tense appendical abscess greatly stretches or compresses the ureter, or when it bursts into the bladder and leaves a fistulous opening, connecting one with the other. Most perityphlitic abscesses drain directly into the colon, where the pus is carried off by the emunctories, but the course is sometimes by the vesical route, as occurred in a young sailor operated on by me two years after he first had appendicitis in the West Indies.

Typhlitis, with or without perforation, a condition said to be not very uncommon in tubercular peritonitis, presents practically the same physical signs as appendicitis, although some authorities allege that in tuberculosis perforations rarely occur except in the latter.

THE MORE COMMON MALADIES WHICH PRESENT SEVERAL FEATURES SIMILAR TO APPENDICITIS.

Tubercular Peritonitis.—Tubercular peritonitis may be general or localized; when limited to the mesentery or parietal peritoneum, and when there is attendant paresis of the intestines or ascites it is quite impossible to affirm whether or not the appendix is involved. Under these circumstances I have often seen an operation undertaken for appendicitis reveal no lesion of the organ. The acute, fulminant type of peritoneal tuberculosis is said, in the majority of cases, to have its primary seat in the peri-appendical lymph tissues contiguous with the cecum.

Intussusception.—This condition is one which quite invariably belongs to early infancy. Wiggin, Kelsey and Carpenter have recorded successful laparotomy for it in infants from 2 to 3 months old. It is said to sometimes present several characters common to appendicitis when of the subacute variety. The point of invagination is usually the cecum, the abdomen is distended and there is a tumor. But the age of the infant, the evidence of strangulation and the bloody stools, together with the extreme rarity of the lesion, should seldom leave much doubt as to its real character. Fenger and Gerhards[17] record a case of appendicitis in an infant 7 weeks old, and Matterstock had seen it in one of 6 months, both presenting features in common with intussusception. Gordon speaks of intussusception being more common in "1st infancy" before dentition, and says that appendicitis steadily increases in frequency from the 2d to the 15th year.

Typhoid Fever.—Typhoid in children is well known to pursue an atypical course, and occasionally may be mistaken for appendicitis. Warren tells us that in those mixed cases presenting complex clinical features, we can not rely on Widal's test. Diarrhea is not an uncommon concomitant of appendicitis, and in both, iliac tumefaction and tenderness are generally present.

Appendicitis with Appendical Invagination into the Cecum.—This remarkable condition has been described by various writers. Harrison cites a case of intussusception of the appendix with invagination in a child 4 years old.[18] John Kidd, another in a child of 7 years, the greatest pain being over the umbilicus. Dr. S. McGraw reported a case in a lad of 7, the condition lasting four months. The head of the cecum and appendix were removed; recovery following.[19] Other instances of this singular complication are recorded in Mr. Greig Smith's work.[20] Intussusception of the appendix, with or with-

out ulceration or perforation, though anatomically of great interest, evidently presents no special definite points for diagnosis, and if it did, its treatment would be on the same general lines called when laparotomy is performed for appendicitis. All the cases on record occurred in young children.

EXAMINATION OF THE BLOOD AS AN AID TO DIAGNOSIS OF APPENDICITIS.

So far we have been able to derive but little if any assistance in the differential diagnosis of local or general disease, by examination of the blood microscopically, except, perhaps, in paludal affections. The presence of the leucocytosis, however, has been supposed by some to establish the evidence of pus formation in febrile conditions of the system. But corpuscular count in my own hands has proved so indefinite and delusive as to have convinced me that it possesses no practical value whatsoever in suppurative lesions. Not long since a noted member of the profession, in an obscure abdominal lesion, in a patient of mine, diagnosed a neoplasm of the spleen from the pronounced state of leucocytosis found on microscopic examination of the blood; but on abdominal section the greater part of the stomach was found destroyed by carcinoma, the spleen being entirely healthy. Warren says that count in the average case of pus-tube or appendicitis shows from 15,000 to 30,000 white discs per cubic millimeter; he adds that it is not the product but the virulence of the infection which governs the count. "The degree of leucocytosis is independent of the amount of pus, a felon may raise the count as much as an empyema."[21]

PHYSICAL EXAMINATION OF THE PATIENT.

The most reliable and definite source of information in the diagnosis of appendicitis is through exposure and critical examination of the abdominal walls. This may be generally efficiently performed in the conscious state. It may, however, possess indefinite value and lead to fallacious conclusions, if we fail to secure a full clinical history of the case, and if we have not thoroughly analyzed all the symptoms before we proceed. It goes without saying, that, in consequence of the thin abdominal walls and the absence of those organic maladies so often encountered in adults, especially females, this examination should be a comparatively simple matter in the appendicitis of a child in all its stages; and so it certainly is, though admitting this; yet when we bear in mind the immature stages of development and the different relations of the viscera we can understand how we may even here be led into error.

SURFACE EXAMINATION.

Inspection.—It is well, in all examinations of the abdomen, to place the patient on a flat surface on the back, when this is expedient. If the child is restless or intractable other means may be necessary. The first thing we will notice in appendicitis is the flexion of the right lower limb, although Gibney, the noted orthopedic surgeon, warns us not to attach too much importance to this alone, as we have it also in coxitis and psoas abscess. We will have the same phenomenon in an over-distended bladder, when both limbs are drawn up.

TYMPANITES AND INCREASED RESPIRATION.

Abdominal distension in varying degrees is a common accompaniment of appendicitis in all its stages, but it may depend on other causes than intestinal paresis. The physiologic character of the respiration is practically the same in both sexes in childhood. In peritonitis the respirations are frequent and shallow; we will note that the movements of the diaphragm are restricted and that respiration is mostly thoracic.

Manipulation, Palpation, and Percussion.—Digital exploration of the abdomen is a most valuable resource. Muscular resistance or rigidity is present in varying degree, according to the location and extent of inflammatory changes. In most cases distinct localized tumefaction is made out over the site of the diseased appendix. Deaver notes that in some cases of hyperesthesia-abdominalis a tumor may be present, but it can not be delineated by palpation. The full flexion of the thigh on the abdomen always materially aids in localizing the tumor by relaxing the abdominal muscles. Dr. Edebohls attaches great importance to the value of palpating in localizing the appendix in inflammatory conditions. After a trial of this device, on the abdomen of several fresh cadavers, and those of patients about to be operated on, no single instance has ever come under my observation wherein definite location of the appendix was possible. A general safe working guide for the approximate location of the appendix is where the lodgment of the tumor is best defined. When the cecum is normally located this is at what is known as "McBurney's point."

Percussion.—This is an important adjunct, but when the abdomen is meteoric and hypersensitive it may be impracticable without the employment of an anesthetic. In cases of suspected fecal impaction or vesical overdistension, it is of the greatest importance.

Deep Puncture.—Deep puncture by the hypodermic or aspirating needle has been employed as an aid in the diagnosis of perityphlitic abscess, but it is not without danger and is not always reliable. Haupt records the employment of puncture in 116 children's cases. Pus was found but once, though on operation an abundance of purulent formation was exposed, in most all the cases. Ten years ago a boy of 12 years came under my care for the treatment of appendical abscess. In order to convince the parent that pus was present, I passed in, behind and below the cecum, a long exploratory needle. This was at once filled with purulent material. But the parents were obdurate and would not consent to an operation, and the boy made a good recovery without it. About the same time, the late Dr. John G. Truax, in the Harlem Hospital service, finding a very large inflammatory fulness in the right iliac fossa, with signs of appendicitis, passed in an aspirator needle, drew off a pint of fetid pus, injected the cavity with saline solution and then drew this off, the patient making an excellent recovery.

Rectal Evacuation.—This may be utilized with advantage in many cases of appendicitis in early life. By this route the examination is availed of for the special purposes: 1. In order to determine the presence or absence of co-prostatis, fecal impaction of the colon or rectum. 2. In order to locate the site of the appendix or tumor and the extent of purulent accumulation.

By conjoined manipulations under an anesthetic, nearly any localized fulness below the umbilicus, in a child under 10 years, usually may be detected and its general characters appreciated.

SYMPTOMATOLOGY.

At the threshold of this phase of our study the questions arise: "Is there a wide distinction in the general characters of the symptoms of appendicitis in the child

DEATHS FROM APPENDICITIS, BOROUGHS OF MANHATTAN AND THE BRONX, DURING DECADE 1890-1899, ARRANGED BY QUARTERS.*

Year 1890.

		Total.	1 year.	1 year.	2 years.	3 years.	4 years.	Total under 5 years.	5-10	10-15	15-20	20-25	25-35	35-45	45-55	55-65	65-75	75-85	85+	Colored.
First Quarter...	Males..	12	..	..	..	..	..	.....	1	1	2	.....	2	2	3	1	.....	.....	.....	.....
	Females	9	1	..	..	..	..	1	.....	.....	1	1	4	1	1	.....	.....	.....	.....	.....
Second Quarter..	Males..	18	..	..	..	..	..	.....	3	2	1	1	4	1	3	3	.....	.....	.....	.....
	Females	10	..	..	..	..	..	.....	1	.....	1	1	4	.....	2	.....	1	.....	.....	.....
Third Quarter...	Males..	17	..	1	..	..	..	1	1	3	4	2	3	1	1	.....	.....	1	.....	.....
	Females	4	..	..	..	..	..	.....	.....	.....	1	1	1	.....	1	.....	.....	.....	.....	.....
Fourth Quarter..	Males..	13	..	..	..	..	..	.....	2	1	2	1	3	2	2	.....	.....	.....	.....	.....
	Females	4	..	..	..	..	..	.....	.....	1	1	.....	.....	1	1	.....	.....	.....	.....	.....
Total	Males..	60	..	1	..	..	..	1	7	7	9	4	12	6	9	4	.....	1	.....	.....
Total	Females	27	1	..	..	..	..	1	1	1	4	3	9	2	5	.....	1	.....	.....	.....

Appendicitis, 87; Suicides, 239.

Year 1891.

First Quarter...	Males..	9	..	..	..	..	..	.....	.....	2	2	1	2	1	1	.....	.....	.....	.....	.....
	Females	5	..	..	..	..	..	.....	1	.....	.....	2	.....	1	.....	.....	1	.....	.....	.....
Second Quarter..	Males..	9	..	..	..	..	..	.....	1	1	.....	.....	2	2	1	.....	2	.....	.....	.....
	Females	7	..	..	..	..	..	.....	1	1	1	.....	1	1	1	1	.....	.....	.....	.....
Third Quarter...	Males..	24	..	..	..	..	..	.....	2	4	4	3	4	4	2	.....	1	.....	.....	1
	Females	9	..	..	1	..	..	1	2	2	.....	.....	1	1	1	1	.....	.....	.....	.....
Fourth Quarter..	Males..	10	..	..	..	..	1	1	.....	1	.....	3	2	1	2	.....	.....	.....	.....	.....
	Females	10	..	..	..	..	..	.....	1	.....	1	1	.....	3	2	1	1	.....	.....	.....
Total	Males..	52	..	..	..	..	1	1	3	8	6	7	10	8	6	.....	3	.....	.....	1
Total	Females	31	..	..	1	..	..	1	5	3	2	3	2	6	4	3	2	.....	.....	.....

Appendicitis, 83; Suicides, 300.

Year 1892.

First Quarter....	Males..	18	..	..	..	..	..	.....	3	.....	1	3	2	3	2	3	1	.....	.....	.....
	Females	12	..	..	..	..	..	.....	1	2	1	4	3	.....	.....	1	.....	.....	.....	.....
Second Quarter..	Males..	17	..	..	1	..	..	1	1	2	2	4	4	1	.....	1	1	.....	.....	1
	Females	17	..	..	..	..	..	.....	1	1	3	1	6	2	1	1	1	.....	.....	.....
Third Quarter...	Males..	27	..	..	..	..	..	.....	2	5	1	6	5	1	4	.....	2	1	.....	1
	Females	11	..	..	..	..	1	1	1	1	1	2	.....	1	1	2	.....	1	.....	.....
Fourth Quarter..	Males..	16	..	..	..	..	..	.....	.....	3	2	4	3	2	1	1	.....	.....	.....	.....
	Females	11	..	..	..	..	..	.....	.....	2	2	2	1	.....	1	.....	2	1	.....	.....
Total	Males..	78	..	..	1	..	..	1	6	10	6	17	14	7	7	5	4	1	.....	1
Total	Females	51	..	..	..	..	1	1	3	6	7	9	10	3	3	4	3	2	.....	.....

Appendicitis, 129; Suicides, 249.

Year 1893.

First Quarter....	Males..	8	..	..	..	..	..	.....	.....	.....	1	.....	3	4	.....	.....	.....	.....	.....	.....
	Females	5	..	..	..	..	..	.....	1	1	.....	2	.....	.....	.....	1	.....	.....	.....	.....
Second Quarter..	Males..	13	..	..	..	..	..	.....	.....	2	2	3	1	2	1	2	.....	.....	.....	.....
	Females	13	..	..	..	..	..	.....	.....	1	2	2	2	3	.....	2	.....	.....	.....	.....
Third Quarter...	Males..	20	..	..	..	..	..	.....	.....	1	3	4	9	.....	2	.....	.....	.....	.....	.....
	Females	9	..	..	..	..	1	1	1	.....	1	2	.....	1	1	.....	2	.....	.....	.....
Fourth Quarter..	Males..	15	..	..	..	..	..	.....	3	3	1	1	4	2	1	.....	.....	.....	.....	.....
	Females	4	..	..	..	..	..	.....	1	.....	.....	.....	1	2	.....	.....	.....	.....	.....	.....
Total	Males..	56	..	..	..	..	..	.....	4	6	7	8	17	8	4	2	.....	.....	.....	.....
Total	Females	31	..	..	..	..	1	1	4	2	3	6	3	6	1	3	2	.....	.....	.....

Appendicitis, 87; Suicides, 314.

Year 1894.

First Quarter....	Males..	14	..	..	..	..	..	.....	3	2	.....	1	3	2	3	.....	.....	.....	.....	.....
	Females	12	..	..	..	..	..	.....	1	1	.....	2	3	2	2	1	.....	.....	.....	1
Second Quarter..	Males..	24	..	..	..	1	..	1	1	3	2	5	5	3	4	.....	.....	.....	.....	.....
	Females	6	..	..	..	..	..	.....	1	2	.....	1	.....	1	1	.....	.....	.....	.....	.....
Third Quarter...	Males..	18	..	..	..	..	..	.....	1	2	4	4	.....	2	3	2	.....	.....	.....	.....
	Females	13	..	..	..	..	..	.....	1	2	1	1	2	2	2	2	.....	.....	.....	.....
Fourth Quarter..	Males..	13	..	..	..	..	..	.....	.....	2	2	1	5	.....	3	.....	.....	.....	.....	.....
	Females	17	..	..	..	..	1	1	3	3	2	2	2	4	.....	.....	.....	.....	.....	1
Total	Males..	69	..	..	..	1	..	1	5	9	8	11	13	7	13	2	.....	.....	.....	.....
Total	Females	48	..	..	..	..	1	1	6	8	3	6	7	9	5	3	.....	.....	.....	2

Appendicitis, 117; Suicide, 331.

Year 1895.

First Quarter....	Males..	26	..	1	1	..	..	2	4	.....	6	3	3	2	1	5	.....	.....	.....	.....
	Females	26	..	..	..	..	..	.....	2	3	4	4	3	5	1	4	.....	.....	.....	.....
Second Quarter..	Males..	24	..	..	..	..	..	.....	1	1	2	5	8	5	1	.....	.....	.....	.....	.....
	Females	15	..	..	..	..	..	.....	4	.....	.....	4	4	1	1	.....	1	.....	.....	.....
Third Quarter...	Males..	40	2	..	1	..	2	5	8	4	4	4	4	5	5	.....	2	.....	.....	.....
	Females	25	..	..	..	..	1	.....	1	2	2	3	8	5	1	2	.....	.....	.....	1
Fourth Quarter..	Males..	23	..	..	..	1	..	1	3	5	.....	5	4	.....	3	1	1	.....	.....	1
	Females	13	..	..	..	..	..	.....	1	6	.....	2	1	3	.....	.....	.....	.....	.....	.....
Total	Males..	113	2	1	2	1	2	8	16	11	12	17	19	12	9	6	3	.....	.....	1
Total	Females	79	..	..	..	..	1	1	8	11	6	13	16	14	3	6	1	.....	.....	1

Appendicitis, 182; Suicides, 376.

Year 1896.

First Quarter....	Males..	29	..	..	..	1	..	1	4	.....	4	3	4	6	4	2	1	.....	.....	1
	Females	15	..	..	..	..	..	.....	4	1	1	1	2	1	3	.....	1	1	.....	.....
Second Quarter..	Males..	31	..	..	..	2	..	2	3	4	2	6	5	3	1	3	2	.....	.....	.....
	Females	21	..	..	1	..	..	1	2	4	3	1	6	.....	.....	3	1	.....	.....	.....
Third Quarter...	Males..	38	..	..	..	..	..	.....	5	6	4	5	4	8	4	1	1	.....	.....	.....
	Females	24	..	..	..	..	..	.....	3	1	2	5	5	5	1	1	1	.....	.....	1
Fourth Quarter..	Males..	31	..	..	..	..	..	.....	.....	2	5	7	9	4	3	1	.....	.....	.....	1
	Females	12	..	..	..	..	..	.....	2	1	1	2	2	2	1	1	.....	.....	.....	.....
Total	Males..	129	..	..	..	3	..	3	12	12	15	21	22	21	12	7	4	.....	.....	2
Total	Females	72	..	..	1	..	..	1	11	7	7	9	15	8	5	5	3	1	.....	1

Appendicitis, 201; Suicides, 384.

Year 1897.

First Quarter....	Males..	38	..	1	..	..	..	1	4	5	4	4	11	4	4	1	.....	.....	.....	3
	Females	15	..	..	..	..	..	.....	4	.....	.....	.....	3	4	1	2	1	.....	.....	2
Second Quarter..	Males..	25	..	..	..	1	..	1	5	4	3	2	4	4	2	.....	.....	.....	.....	1
	Females	20	..	..	..	..	..	.....	3	3	1	3	4	1	1	3	1	.....	.....	.....
Third Quarter...	Males..	35	..	..	..	..	..	.....	4	8	5	9	2	2	3	2	.....	.....	.....	.....
	Females	18	..	..	..	..	..	.....	1	5	2	2	4	.....	3	1	.....	.....	.....	.....
Fourth Quarter..	Males..	27	..	..	..	..	1	1	2	6	1	3	3	8	1	1	1	.....	.....	3
	Females	15	..	..	..	..	..	.....	1	3	1	2	2	3	2	1	.....	.....	.....	.....
Total	Males..	125	..	1	..	1	1	3	15	23	13	18	20	18	10	4	1	.....	.....	7
Total	Females	68	..	..	..	..	..	.....	9	11	4	7	13	8	7	7	2	.....	.....	2

Appendicitis, 193; Suicides, 436.

* The Bronx is a district on the North recently annexed to New York.

Year 1898.

First Quarter....	Males..	40							2	4	4	7	10	8	1	4								
	Females	24							1	1	4	7	3	3	1	3	1							
Second Quarter..	Males..	28				1	1	2	1	6	2	1	7	3	3	4	2							1
	Females	33							3	3	6	6	4	3	3	4	1							
Third Quarter...	Males..	42			1	1		2	7	1	3	7	8	9	3		2							2
	Females	27							5		2	4	4	6		3	2						1	
Fourth Quarter..	Males..	40							3	10	1	5	5	9	5	2								2
	Females	18								4	2	5	3	1		1	1	1						
Total	Males..	150			1	2	1	4	13	21	10	20	30	29	13	8	2							5
Total	Females	102							9	8	14	22	14	13	4	11	5	1		1				

Appendicitis, 252; Suicides, 428.

Year 1899.

First Quarter....	Males..	35	1					1	3	1	4	7	8	5	1	3	2							1
	Females	29							6	3	2	4	8	3	3									2
Second Quarter..	Males..	59				1	3	4	4	8	6	9	13	5	9	1								
	Females	42					2	2		8	5	8	10	5	2	1	1							1
Third Quarter...	Males..	51					1	1	4	5	8	8	9	8	1	6	1							1
	Females	28							2	5	4	4	6	1	2	2		2						
Fourth Quarter..	Males..	35				1		1	3	6	4	6	6	2	6	1								
	Females	27							3	1	3	1	7	2	5	1	4							2
Total	Males..	180	1			2	4	7	14	20	22	30	36	20	17	11	3							5
Total	Females	126					2	2	11	17	14	17	31	11	12	4	5	2						5

Appendicitis, 306; Suicides, 400.

DEATHS FROM APPENDICITIS, NEW YORK CITY, YEAR 1899, ARRANGED BY QUARTERS.*

Year 1899.

First Quarter....	Males..	54	1				1	2	4	3	7	9	11	7	5	4	2							1
	Females	39							6	4	2	7	11	3	3	3								2
Second Quarter..	Males..	78				1	4	5	6	10	8	11	18	7	10	2				1				
	Females	59				2	2	4	3	9	7	11	15	5	3	1	1							1
Third Quarter...	Males..	80					1	1	7	11	12	11	12	14	2	7	2	1						1
	Females	43							5	7	5	7	9	2	3	2	1	2						
Fourth Quarter..	Males..	53				2		2	4	10	4	9	10	3	8	2	1							1
	Females	36							6	21	17	27	45	13	14	7	6	3						5
Total	Males..	265	1			3	6	10	21	1	3	2	10	3	5	1	4	1						2
Total	Females	177				2	2	4	20	34	31	40	51	31	25	15	5	1	1					3
Total of both sexes..		442	1			5	8	14	41	55	48	67	96	44	39	22	11	4	1	1				8

* Manhattan and Bronx Boroughs.

Estimated population Greater New York, July 1, 1899, 3,550,053.

Estimated mean population of New York (present boroughs of Manhattan and Bronx), for ten years, 1890-1899, inclusive:

1890	1,612,559	1895	1,879,195
1891	1,659,654	1896	1,934,077
1892	1,708,124	1897	1,990,562
1893	1,750,010	1898	2,048,830
1894	1,809,353	1899	2,117,106

Estimated mean population of Manhattan and The Bronx since consolidation:

	1898.	1899.
Manhattan	1,911,755	1,953,569
The Bronx	137,075	163,537
	2,048,830	2,117,106

and the adult?" Is the disease so much more common in early life that we should be on the alert for it when painful abdominal symptoms suddenly set in? Has appendicitis a large mortality in childhood? We certainly have reason to believe that various innocuous types of typhlitis and appendicitis are very common in early life, but though there is at this stage an absence of many complex pathologic conditions found only in the adult, which give rise to symptoms similar to cecal implication, here even in childhood and infancy there are numerous diseased states that in their general features and most pronounced symptoms are quite identical with appendicitis.

STATISTICS.

In order to determine the relative mortality of appendicitis at the different stages of life, I requested Dr. R. S. Tracy, the registrar of records in the Health Department of New York, to provide me with data under this head. Below are the figures very kindly supplied by him. These tables include all the cases of appendicitis ending fatally in New York City, and the annexed district north, in the ten years preceding 1900. There were in all 1637 deaths; in children under 5 years, 218 cases; 1331 in children under 15 years; 375 cases; 22.90. Just before these appended tables were prepared for me, the question of prophylactic appendectomy was discussed in the *St. Louis Medical Review*, when I was able to show that the annual number of deaths from suicide in New York was greater than from appendicitis.

CONSTITUTIONAL AND LOCAL SYMPTOMS.

Richardson has said that "the presence of acute appendicitis is rightly regarded as easy to determine, as there are few diseases which have so uniform a set of symptoms." This statement is no doubt correct, in typical cases, but if it be intended to apply to many of the complex forms seen in childhood, it will not hold.

The dominant symptoms, fever and colicky pains, are very common in many maladies of infancy and childhood. Holt has called attention to the frequent presence of severe epigastric pain from hepatic or splenic congestion in malaria of early life. All know how common painful disturbances are along the intestinal tract, from worms—ascarides and lumbricoides—in children. Recently, Frazer reported a case of appendicitis in which the appendix was found filled with oxyurides vermiculares. The patient was 2 years old.[22]

Tuberculosis of the intestinal tract, its serous investment or its lymphatic glands in the inflammatory stages, is attended with pain varying in intensity and location. Its usual site is the hypogastrium, although sometimes the area of hyperesthesia will be found over the site of pathologic changes in the tissues. Dysenteric and diarrheal diseases in childhood and infancy are quite invariably attended by spells of severe pain. These conditions may precede or accompany appendicitis of a severe form in young children. Griffith in recording two successful operations for appendicitis in two patients, 3 and 4 years old, respectively, says that in both there was a marked distension of the abdomen with a dysenteric diarrhea.[23] The constitutional symptoms of acute appendicitis are quite identical with those of peritonitis, in fact, in nearly every well-marked case of appendicitis the peritoneum is involved. Pain, fever, thirst, vomiting, a quick pulse with great prostration, warn us that some serious pathologic condition is in operation, involving parts invested by the peritoneum. The paretic intestine and bladder contribute toward abdominal distension. The spread of infection up through the parietal investment extends into the muscles and all the overlying tissue. Muscular rigidity and free edema along the lateral plane of the abdomen, in peritonitis, is one of the consequences.

Despine says that the inception of the septic form is more insidious in the child, and so the disease is

more redoubtable. This author also alleges that perforation is here more common than with the adult. Acute severe appendicitis often begins with the symptoms of mechanical obstruction of the intestine, although in some cases of interstitial tuberculosis the same phenomenon may obtain. Quènu records such a case, in which the first symptoms pointed to occlusion and the second to appendicitis.[24]

That the premonitory symptoms of appendicitis in the child are more subtle and insidious than in the adult is lacking in support. Richardson, speaking of the symptoms in general, says that "pathological processes, ulcerative, etc., may go on without symptoms until the peritoneal coat is involved." This is entirely in accord with our own experience in the adult, and is just as commonly as with the child.[25]

Neither does our experience justify the assertion that the malady is more grave in the child, or that when gangrene occurs in early life pain abruptly ceases. When we are in doubt as to the interpretation of symptoms in appendicitis when seen early, says Talamon, we may often delay from four to five days, when peritonitis will be present. Breton notes the occasional absence of pain in atypical appendicitis of children, as is sometimes seen in adults.[26]

Dieulafoy, a noted clinician of great experience, is emphatic in pronouncing all well-developed cases of appendicitis in children as being exceedingly lethal. He says, the physician should note the symptoms with caution and make no delay in calling for surgical aid.[27]

ON THE RELATION OF SYMPTOMS TO PATHOLOGIC CONDITIONS.

Symptoms in disease are Nature's monitors, to warn us of the presence of lethal processes in the economy. They usually bear a comparatively definite relation to the extent and to the character of pathologic changes in operation.

There have been many attempts at the classification of the various types of appendicitis, by several authors, and it has been alleged that each is usually manifested by a fairly uniform group of symptoms. But while such a consummation is something most earnestly desired, we are yet very far from it. There are but three phases of appendicitis which, by either signs, symptoms or diagnostic evidence, can be established with any reasonable degree of certainty. These are:

1. *Acute appendicitis or peri-appendicitis in its congestive or plastic stages,* beyond which the great majority of cases do not advance, particularly in early life. The pericecal tissues share freely in the pathologic changes here. There is a well-defined iliac tumor with *peritonisme;* the knee is drawn up and the patient walks with a stooped and painful gait. There has been a large plastic effusion in the pericecal tissues, the vessels are highly engorged and lymph is freely transuded. There is a sharp but transient reaction of the constitution in a vigorous patient; but struma, syphilis, tuberculosis or malaria will protract it.

In this class we should see to it that the colon is well cleaned early by enemata, as a free alvine evacuation will often reduce all symptoms, as though by magic; with this, fever and vomiting cease; convalescence is established with increased strength.

Vesical distension: In this class it is of the greatest importance in young children that we shall closely look to the state of the bladder, which becomes enfeebled early and is liable to overdistension, when greater agony and danger may arise from this than the condition which gave rise to it. In fact, it may of itself impart an aspect of forlorn hope to a case of appendicitis, otherwise comparatively harmless. An illustrative instance occurred to me some years ago. A boy of 9 years, suffering for nine days from appendicitis, was under the care of the most noted pediatrist of New York. The case taking on alarming symptoms a noted surgeon was called in consultation. It was decided that he had general peritonitis, that the case was not a proper one for laparotomy, and that there was but little hope of recovery. In the evening of the same day the case came under my charge. On inquiring about the urinary evacuation, the nurse said "he was passing urine all the time and was wetting everything." This disarmed my suspicion. But the abdomen was enormously distended; besides, it had a peculiar shape and feel; everywhere it was so exquisitely sensitive that anything like proper palpation or percussion was impossible. As the boy went under an anesthetic and spasm passed off, the greater volume of the fulness was seen inclined toward the right side, which led me to suspect a vast typhlitic abscess.

In opening through the abdomen care was taken to divide and isolate all the layers separately. This step, it was soon learned, saved us a serious accident. When the peritoneum was exposed it bulged freely into the incision. This was very carefully divided, when another smooth glistening body closely followed. This at first puzzled me. I passed an index finger into the peritoneal cavity and followed this tumor down into the pelvis, where its relation convinced me that it was an overdistended bladder. With the abdomen yet open, a catheter was pased and 51 ounces of urine withdrawn. The appendix, highly inflamed and thickened, was easily found and removed. All the pericecal tissues were highly inflamed. The boy rapidly recovered, but he would have equally as well and more rapidly had catheterization alone been performed.

Another somewhat similar case came under my care two years ago, in Mamaroneck, N. Y. Dr. A. H. Hoerr sent for me in the evening to come up and operate on a severe case of appendicitis in a girl of 12 years. When I reached there, in the afternoon, although there had been a great change for the better, full preparations were made for the operation.

On a thorough examination of the case there was no evidence of a single bad sign nor symptom. The mother informed me that for five days her daughter had suffered the greatest agony, the pain beginning in the right groin and spreading over the abdomen, which had become distended, hard, and sensitive everywhere. Thirst and vomiting persisted, and rest or sleep was impossible without large doses of morphin. But at midnight she made a desperate effort to urinate and passed nearly a quart vessel full. An hour later she rose again and passed fully a half-gallon more. Then she went to sleep and did not awaken till nine the next morning, when she had another large evacuation of urine, this time with a copious alvine discharge from the bowels.

All the symptoms had vanished and now she only craved something to eat. I saw nothing to warrant an operation at this juncture, very much to the gratification of the poor child and her anxious parent. Dr. Hoerr informs me that she was out in a week and that there has been no evidence of recurrence.

Septic symptoms sometimes accompany those cases of what I would designate "congestive appendicitis."

The modern word "sepsis," which may mean anything or nothing, next to malaria, has been made the scapegoat of diagnosis in nearly every conceivable malady. In appendicitis it calls up in the imagination pools of pus, a decomposed, rotten appendix; while we remain quite unmindful that there is often at the bottom of this sepsis an overdistended paralyzed colon, filled with a germ-laden, foul mass of impacted feces. Let us not be deceived into overlooking the state of coprostasis because there is some looseness; as in some of the worst cases of impaction, it is the most marked. These cases all call for a digital examination of the rectum. Mr. Thornley Stoker of Dublin has called attention to the importance of a critical examination of the colon and rectum in all these cases.

2. *Appendicitis with gangrenous, ulcerative perforation and suppurative typhlitis* is a lesion consecutive to the congestive form and is manifested by essentially the same symptoms, only that they are more intensified and the constitution is more seriously compromised. In this type, true septic processes are in operation in varying degrees of intensity. The appendix is the seat of vascular asphyxia, gangrene and perforation. It early forms very firm adhesions, most frequently with the cecum, and lights up an inflammation which spreads widely through the pericecal tissues. When the cecum itself is the seat of gangrenous perforation, a similar pathologic process is in operation and similar symptoms attend. Naturally enough, we look for an acute peritoneal reaction with grave disturbances of the system when mortification has seized on an intestinal structure of the abdominal cavity.

A lesion attended with suppurative changes, necrosis or rupture of a tubular structure one would presume would stir up and call forth a series of alarming symptoms, both constitutional and local. But, strange to say, in some cases of this class there are but very slight, if any marked, systemic disturbances. It has been said that perforative appendicitis is of a more insidious character in children, and that the disease possesses a more acute course with them, and hence the importance of early and definite diagnosis here. In tubercular cases, it is true, the onset may be quite insensible, but the same obtains in the adults, hence it may be said that, as a rule, suppurative or gangrenous appendicitis of various types presents no definite symptoms whatever, until the peritoneal investment is involved and perforation has begun. We know no pathognomonic symptoms in the early stage of these conditions, nor at any time during their course in a large number. Even if we did, it is doubtful whether it would avail anything for the reason that there can be no doubt, but in the great majority of suppurative or perforative cases, well localized and encysted, the peritoneum, the cellular tissues and the lymphatics are capable of rendering the effete elements of pyogenic and disintegrating changes so innocuous that their residuum may be completely resorbed and assimilated with impunity. Appendicitis of this type seldom presents urgent symptoms, except when there is fecal extravasation, when pus is formed in great quantities and burrows into the retroperitoneal tissues, or there is impending danger of the pyogenic membrane bursting and provoking a general peritonitis. In aggravated cases of this type there is nausea, vomiting and thirst, with persistent constipation from paresis of the intestine. Peristaltic tugging of the small intestine on the inflamed, imprisoned cecum produces periodical pain of the most agonizing type. This is augmented by coughing, vomiting, or any sudden straining of the diaphragm. The pain is felt with the greatest intensity in the epigastrium, although the site of the greatest tenderness is over the intestines, the cecum and neoplastic mass. In the adult this is the most constant at McBurney's point, where the cecum is most commonly lodged; but in the infant and growing child the cecum has a longer and looser mesentery which permits of a considerable degree of movement toward the median line; moreover, it has not yet fully descended, and hence McBurney's point in early life is too low down and external to fall over the underlying cecum. When the appendix is lodged under the cecum, and is practically extraperitoneal, the suppuration following perforation may penetrate deeply behind the pelvic fascia; there is an absence of a defined tumor; purulent absorption gives rise to symptoms of septicemia, to a low grade of fever with diarrhea, exhaustive sweats and emaciation. These are the cases which may be confused with or mistaken for typhoid fever. Invariably the system is in a state of toxemia (septic), so that even though a laparotomy be performed and the decomposed purulent material evacuated, septic symptoms yet linger and the patient may sink. If recovery follows it is tedious. In fact, some of these grave cases are so profoundly septic and the degree of cardiac exhaustion is so great that late operation brings no relief.

The constitutional condition is generally the main guide to rely on in the average case of encysted typhlitis or appendicitis. The presence of a small iliac tumor gives one little apprehension, if severe pain is absent; there is no vomiting nor thirst, and marked muscular rigidity is absent. Resolution in many of these cases is as rapid as the onset. The first, most salutary symptoms of this are loss of thirst, the cessation of pain, a large free action of the bowels and return of natural sleep and relish for food.

3. *Perforation of the appendix directly into the peritoneal cavity* is accompanied with redoubtable symptoms. They may set in suddenly or gradually, and are dependent on a general peritoneal infection of all the serous structures in the abdomen. It early spreads outward through all the tissues in the abdominal walls. The entire intestines and the bladder are paralyzed. The abdomen is flat, hard, and everywhere highly sensitive. The pain is most agonizing. The patient vomits great quantities of bile and suffers from an insatiable thirst. The pulse points to a flagging heart and the cadaverous, shrunken features of the paient often portend mortal changes near at hand. This is the final close of grave appendiceal cases, said by Dieulafoy and some other authors to be most frequent in children. This, if borne out by ample support, should suggest the great importance of a correct interpretation of the symptoms at the very earliest stage of the malady, that prompt surgery may cut it short, while yet an operation may be safely supported. Could we by any symptoms determine with any degree of certainty when a gangrenous appendix opens into the general cavity of the peritoneum, probably every life might be spared. It does not appear clear whether in all these cases they were first of the encysted variety just considered, the pyogenic wall giving way around them, or whether the gangrenous appendix at the very outset opens directly into the peritoneal cavity. Some authors claim that on the appendix opening into the peritoneal cavity there is marked shock and great prostration, but this has not been my experience. With the escape and diffusion of fecal fluids and gases there can be no doubt that the general

spread of infection extends over wide areas and is attended with an intensity in the symptoms proportional to the extent of pathologic changes. But, except in rare cases of the fulminant type, it is probable that after a small perforation the leakage is gradual and we have no sharp peritoneal reaction or grave symptoms until infection is generalized. The most constant and harrowing symptom of acute general peritonitis is pain; and no description of pain so quickly crushes the spirit of the stoutest and paralyzes the heart as that suffered in this disease. This must be relieved at all hazards, or all is lost. The temperature and the pulse fairly presage the progress and the termination of the malady. With the subsidence of the pain and a fair share of sleep or tranquility, thermal and vascular symptoms show signs of abatement.

Extreme restlessness, great thirst and a flitting, feeble pulse point to a state *in extremis,* when the case has passed beyond all human aid and the end is near.

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IS IT POSSIBLE BY PROPER DIETETICS AND HYGIENE TO EXTERMINATE TUBERCULOSIS?*

J. E. KINNEY, M.D.
DENVER, COLO.

I am aware that the literature on prophylaxis of tuberculosis is already very complete and contains more suggestions than we are willing at all times to take the trouble to thoroughly carry out; but the paramount importance of the subject, as shown by the terrible inroads being made upon the people of all lands, is my plea for bringing these considerations before the members of this Section, with whom rests most of the responsibility of educating the people to rid themselves of the ravages of the disease.

It is now nearly twenty years since the discovery of the bacillus of tuberculosis by Koch. During this time many of the world's greatest scientists have labored incessantly to conquer this microscopic enemy of mankind, and destroy its effects. The history-making in all departments pertaining to tuberculosis has been rapid, and the data collected are of the greatest value. The causes have been surely demonstrated, the prevention is fast becoming an exact science, and the treatment is every year being improved, though yet far from what we could desire. At one time it was thought that a specific had been found. The press of the whole world was filled with praises for the discoverer, and it seemed fitting that to him should come this great honor. He had shown the existence of the germ, why should he not find the power to destroy. Soon it was learned that too much had been expected; more, indeed, than the investigator had claimed, for the new germicide proved to be impotent. Since then we have perhaps grown wiser and very few are now looking for a specific cure.

In spite of our better knowledge and treatment the disease has, in the meantime, at least been holding its own, or perhaps gaining ground. So great has the peril become that we can no longer consider simply the individual case, our attention being more and more directed to the saving of the people. This was shown when the invitation was extended to attend the International Congress in Berlin last year. The wording showed the issue—*Kongress zur Bekaempfung der Tuberculose als Volkskrankheit.*

The chief conclusions in this Congress, and also in articles in the symposium on tuberculosis, at the fiftieth meeting of the AMERICAN MEDICAL ASSOCIATION, were that the disease is not hereditary but acquired (Virchow[1] says: "I now positively dispute this heredity"); that to cure a large percentage of cases, the diagnosis must be made before destruction of the lung tissue has begun; and that by far the surest, and consequently the most important consideration is the prophylaxis, through public and personal hygiene, and the maintaining a high degree of general healthful conditions in the individual.

Neither in the Congress nor in the AMERICAN MEDICAL ASSOCIATION meeting was any method of treatment given which was expected at all to cope with the disease unless the cases could be seen in the very earliest stages. Many are curable if diagnosis is made early enough and proper treatment at once instituted. An analysis of several thousand treated in high altitudes shows that the average percentage of cures in the first stage is 65 per cent, and in the second and third combined, only 15 per cent.[2]

Granting that eventually our treatment can be improved till all cases can be cured, very few realize at what tremendous cost this cure is accomplished. Based on the figures of Knopf, that the cost of a tubercular charity patient in New York is $522, Evans[3] estimates "the cost of tuberculosis in the U. S. $574,000,000 each year, and that tuberculosis kills 152,000 people in the U. S. each year. In the late war there were killed in all directions and in every way, 6300 people, while the war loan for the prosecution of the last war was $150,000,000."

But I wish to call attention to another cost which is much greater, for which one of us would not willingly pay any sum which he could command, if he could ease the suffering and restore the health of one dear to him. We are all too familiar with this cost of mental and physical suffering, deprivations and exile from home.

Granting, then, that a cure is possible in every case, is not the cost and sacrifice too much, is it not better that the emphasis be at once placed where it belongs, and that is on the prophylaxis?

* Read by Title in the Section on Physiology and Dietetics, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

I realize that to place great emphasis upon any one point is to apparently minimize other extremely important ones, but now that the subject of general hygiene relating to the care of tubercular subjects, their surroundings, and the imperative disinfections required, is so thoroughly understood by all, at the risk of being thought as taking a too one-sided view of the matter, I will say nothing more of the general hygiene as I wish to present some facts which belong especially before this Section.

Careful study of statistics shows that over 12 per cent. of all deaths are from pulmonary tuberculosis. In an extremely large percentage of individuals dying from other causes, the bacillus tuberculosis has been found. In some cases active destruction of tissue had been present and entirely subsided, and in others the bacilli had apparently had no effect on the individual. We know that we are all constantly meeting the bacilli and taking them into our systems, and some of us are uninjured by their presence. There is scarcely any place where the bacteriologist has not demonstrated them: in the dust in the streets; in all public and private places; even the air we breathe and the food we eat are laden with the germs. Why is it, then, that some individuals go free, while others yield easily and succumb when attacked? For so omnipresent is the bacillus that if it were dependent alone on the germ, tuberculosis would soon claim the whole world as victims. Fortunately there is a condition against which this germ is powerless, a condition within ourselves which gives protection and immunity, a condition which the individual can absolutely modify, and almost entirely control.

Thomas,[4] in his twelve directions to those who would avoid consumption, says: "Probably the most important of all is to see that the digestive functions are kept in perfect order. Dyspepsia is more often a forerunner of tuberculosis than any other disease. The secretions of a healthy stomach will dispose of a large amount of infected material, but when diseased, the stomach is the principal avenue of infection."

In the logical article of Davis,[5] he says: "The true field for sanitary work in exterminating the bacillus of tuberculosis is in removing the defects, imperfections and impairments of vital resistance in the living body that make it possible for the microbe to multiply and produce disease either in man or animals. Prevent the formation of the necessary soil and you make sure of preventing the crop."

Knopf[6] tells us that he considers "a careful inquiry into the mode of life of the patient, past and present, of great importance. The probably unhygienic environments, a dissipated life, a love for strong liquors, irregularity of meals, great disappointment in matters of love or business, or other depressing factors, all will often give a clue to the origin of an acquired, or to the awakening of a latent, pulmonary tuberculosis. It is well known that many a pulmonary consumption has been preceded by digestive disturbances or typical dyspepsia. Bad eaters are nearly all candidates for consumption."

Bouchard[7] writes: "Disturbances of nutrition rule, in my opinion, the largest number of chronic diseases, and explain the appearance of many illnesses of an acute character." He also says: "We must still remember the fact that dilatation of the stomach renders the economy more vulnerable, and opens the door to diseases of debility. Pulmonary phthisis is often induced by dilatation of the stomach, which exists in two-thirds of the tubercular, and, if we have sought for it early enough, we can convince ourselves that the physical signs of dilatation have sometimes for long preceded the first symptoms that may be regarded as the premonitions of tuberculosis."

In 632 cases of tuberculosis seen in private practice, with the exception of those which developed after unresolved pneumonia—and even in many of these—over 88 per cent. gave a history of either intestinal or gastric disturbance which had existed for a period varying from three months to several years, before the lung became involved.

In every instance in the remaining 12 per cent. the tubercular condition had existed over three years before the patient consulted me, and in each case at this time there was a marked digestive disturbance. Though each one was positive that there had been no early trouble of this kind, I felt sure that if an examination could have been made earlier quite a number of these would have been added to the 88 per cent. It was manifestly impossible to determine what form of disturbance preceded the tubercular trouble, inasmuch as the patients were not seen by me until long after the disease of the lungs had begun. It was even difficult to judge whether the initial digestive trouble was in the stomach or intestine, or both. With one exception these histories show a very representative class of citizens, coming from nearly every state in the Union. Many came from large eastern cities and not a few from country homes; but only a small number were from the chief center of the disease, the overcrowded tenement districts of the cities. This was probably due to poverty and consequent inability to go to a distant climate. But this indigence would surely be conducive to the very conditions of inanition which were so frequently found in my cases. Undoubtedly those who have worked most in these districts have found that there, pre-eminently, do indigestion and mal-assimilation precede the appearance of the tuberculosis, and these disturbances may have as much to do with the frequency of the disease among such persons as the overcrowding and unsanitary conditions.

From the conditions present at the time of my first examination, I should estimate that of the 88 per cent. who gave a history of indigestion antedating tubercular trouble, 78 per cent. were intestinal, 22 per cent. were of stomach origin, though at the time of examination over 56 per cent. showed trouble with both organs. As a long time had elapsed since the beginning of tuberculosis, the initial symptoms had changed greatly, and in most cases had grown worse. In many instances the patient would say that his digestion had always been good, and still remained perfect, and would sincerely think so. An examination would, however, reveal a different condition than he had supposed; microscopic and chemical abnormalities from an empty stomach and after test-meals, great distension over the abdomen, which had continued so long as to make all the abdominal muscles flabby and weak, frequently accompanied by a considerable degree of tenderness over the stomach or intestines, with sometimes tenderness and hypertrophy of the liver; coated tongue; extreme sallowness over the whole body; urine high colored, of high specific gravity and containing indican, bile or the bile pigments in great excess; often a large amount of catarrhal mucus in the stool, and microscopic evidences of an excessive amount of undigested food in the feces. Yes, he had noticed some of these things for a long time,

but had not known that they meant anything. He would simply loosen the clothing over the abdomen after eating and then would be all right.

It is my experience that patients are not very observing. Unless suffering acute pain they will say that they feel no disturbance. In most cases it requires very close questioning to obtain reliable histories, but perseverance in asking will frequently reveal what has entirely escaped the patient's attention. The history of such disturbance has been established in case after case when the first questioning would fail to elicit the fact of there having been any digestive fault. One of the chief reasons for the patient not observing any disturbance is because it comes on so slowly and many times, especially in the intestine, is without pain. Some have never known what good digestion meant, nor to how much better they were entitled. A few years ago I saw a patient in an eye clinic, who came to be treated for conjunctivitis. The Doctor asked her about the vision, and was told it was perfect. He then asked her to tell him the time by the clock on a distant tower. She replied that he could not fool her, there was no clock where he pointed. He then adjusted, by guess, some lenses in a frame and put them before her eyes. The look of astonishment was sufficient to show that she now realized that she never before had really seen, and yet she thought her eyes were perfect.

The history of my cases demonstrates clearly that previous to the tuberculosis manifesting itself there was a period of some months or years during which the individual was in a below-par condition. I do not argue that all depleted conditions lead surely to tuberculosis, but I do insist that there are very few tuberculous persons who did not, by their own habits of living, gradually bring themselves into a condition in which they could contract the disease. If this lack of resistance or debilitated condition produces or is the soil which is favorable to the growth and the development of the bacillus, is it not imperative that we should search early for the primary causes and eradicate them at once?

It is almost axiomatic that in all chronic diseases where no organic damage has been done, to remove the causes is to effect a cure, or rather allow Nature to do so. I wish to speak particularly of the earliest stages of the digestive trouble, especially to draw attention to the original causes which produced the faults rather than the effects on the digestive organs. We need then to go back a step, and look at other factors, concerning the habits of the individual, which are of vital importance, inasmuch as they have caused disturbances with the nutrition.

Based on standard diet-tables compiled by prominent authorities, of the whole number who had had digestive trouble nearly 76 per cent. gave a history of having eaten an excessive proportion of carbohydrates; 65 per cent. having indulged largely in sweets and desserts, many times having made entire meals from these confections; over 68 per cent. had for some protracted period overeaten; 20 per cent. had lived on a general mixed diet—about standard; 45 per cent had taken no regular out-of-door exercise; 34 per cent. had been excessively working from fourteen to eighteen hours daily—and in many of these there had been an element of worry and anxiety—had eaten very hastily, and had taken little or no rest during the day and not sufficient sleep at night; too little water drinking between meals, too much at meals. School children had not infrequently broken down from being overtaxed and improperly fed. The usual annex to our public schools is the penny candy shop across the street, always well patronized. In one of the Denver public schools, whose pupils are from homes in which we would expect the greatest intelligence in the care of children, a teacher, whose pupils averaged 13 years of age, found that out of 45 children, 36 received from 50 cents to $2.00 a month in spending money. The remaining 9 received either more or less. Without exception, every child patronized the "penny candy shop," and not one was restricted as to the amount he should buy or eat. Inquiry shows that this applies to other places throughout the country.

Let me very briefly refer to three of the greatest essentials to a perfect digestion: 1, a proper anatomical and physiological condition of the digestive organs; 2, proper foods—including kind, variety, quantity, proper cooking, etc.; 3, applied nerve force to run the digestive apparatus.

Any habitual departure from these essentials will cause trouble, but the list of departures in civilized countries is almost legion, and hence in some particular case may be very obscure, but must be sought till found. Over-eating is one of the greatest of our faults. Abernethy has told us that "one third of what we eat keeps us, the other two-thirds we keep at the peril of our lives." The human machine is the most economical engine constructed. Nearly all of the force and heat generated can be applied without waste, and, generally speaking, if we supply the proper materials with which it is to work, we need not concern ourselves, but may be sure the work will be well done and proper nutrition supplied.

When the beginning of digestive disturbance has been found, let me insist that it is not sufficient to say to the patient: "Eat what agrees." Almost before anything else this must be borne in mind. Bruce[8] has well said: "First, food is not a mere matter of feeding or giving nourishment. Food is to be employed as a means of treatment at once powerful and delicate, calculated not only to nourish the tissues but to produce immediate, specific and remote effects of a perfectly definite and natural character on the different organs of the body just like the different medicines. Second, if the practitioner do not order the diet, some one else will—his patients or their friends. When he permits them to do so, that is to take an important part of the treatment out of his hands, he usually finds that patients yield to tastes and habits that may be morbid, or to advice which is well meant but probably unwise; and that patients' friends are moved by one thought only—to 'support the strength,' whatever else may be the result, ignorant or unmindful as they are of the other actions of food. Therefore the practitioner must never lose control of the diet. It is not enough that he should permit certain foods; he must employ them definitely as carefully-ordered means of treatment. He should always think of food before he thinks of medicine, and give it a corresponding position of importance in his directions to the nurse or patient."

I will not stop long enough to discuss here what constitutes a proper diet for a healthy person. I believe that we have a right to judge from the construction and physiology of the digestive tube, that a mixed diet is the normal diet, also the quantity of each class, varying with the latitude in which the individual lives, his environment, whether of sedentary habits, or living an out-of-door life, and whether he is a worker or a drone.

It must be carefully borne in mind that proportions

of food given in standard diet-lists are for persons with unimpaired digestion. When either the stomach or the intestine or perhaps both organs show faults in doing their work, no matter whether the causes directly or indirectly have to do with the digestive organs, then perhaps an entirely different proportion of foods must be advised, the proportion depending on which of the digestive organs is most at fault; sometimes cutting off, more or less temporarily, a part or even all of one of the broad classes of foods; that is, the proteins or fats, or carbohydrates, or some particular variety of one of these classes. As more frequent cases of intestinal disturbance occur, we shall more often be obliged to limit the starches and sweets. Not all of these varieties are digested with the same ease, so it is self-evident that that food which is most easily digested and has the highest nutritive value is best for the patient.

It must not be forgotten that there are two ways of judging the values of food, chemically and physiologically; chemically, in having the constituents which are necessary to the organism, but which perhaps can not be appropriated. For example, baked beans are nutritious and very rich in nitrogen, but physiologically they may be easily digested and assimilated by one person, while with another produce only excessive fermentation with its attendant mischief.

In an article by Professor Atwater,[9] some of his conclusions are as follows: "Our diet is apt to be one-sided. It often does not contain the different nutritive ingredients in the proper proportions. We consume relatively too much of the fuel ingredients of food—those which are burned in the body and yield heat and muscular power. Such are the fats of meat and butter, the starch which makes up the larger part of the nutritive material of flour, potatoes, and sugar, of which such enormous quantities are used in the U. S. Conversely we have relatively too little of the protein or flesh-forming substances, like the lean meat and fish and the gluten of wheat, which make muscle and sinew, and which are the basis of blood, bone and brain. We use excessive quantities of food. Probably the worst sufferers from this evil are the well-to-do people of sedentary occupations—brain workers as distinguished from hand workers. Not everybody eats too much; indeed there are some who do not eat enough for their healthful nourishment. But there are those, and their name is legion, with whom the eating habit is as vicious in its effects on health as the drinking habit, which is universally deplored."

In connection with Professor Atwater's deductions as to the value of a relatively larger proportion of albuminous foods in maintaining a higher degree of health and strength, it is not out of place to say here that nearly all of the authorities now agree that in the treatment of tuberculosis the nitrogenous foods are very essential. Indeed, the recent experiments of Richet[10] speak very emphatically as to their worth: "In a large number of dogs inoculated with human tuberculosis, under the same conditions, all died except those which had been fed exclusively on meat; 50 per cent. of these survived. Richet is inclined to explain this salutary action of meat diet on the same principles as the metaphoric method of therapeutics which he recently announced in the enhanced effect of sodium bromid, when salt is almost entirely omitted from the food. The impregnation of living cells by this or that alimentary substance renders them less apt to feel the influence of this or that medicinal or toxic substance. By changing the nourishment of the cells they may be rendered more or less liable to the action of other substances. In feeding dogs with meat exclusively, the cells possibly become impregnated with the extractives of the meat and do not take up the toxins of tuberculosis."

Apropos is the edict from Rome. The *Medical Age* for June 25, 1899, says: "It is publicly stated that there has been an important secession from the ranks of vegetarianism, the entire Dominican order in England having received permission from Rome to eat flesh four days a week instead of perpetually abstaining therefrom as heretofore. In cases of ill health or especially hard work, meat is to be allowed six days a week. This decision has been arrived at after the closest medical and official investigation of the effects of perpetual abstinence from meat in a variable climate like that of England, the result being that vegetarianism has been declared incompatible with physical strength and hard work."

Also, Sir Wm. Roberts[11] says: "The effects of a vegetarian diet would only be gradually developed, and would probably not be fully impressed on the bodily and mental qualities of the race until after such habits had been continued through two or three successive generations." And then adds, "I have encountered in Salford, where some years ago there existed a flourishing colony of vegetarians, a tradition that though vegetarianism might suit the parents it was bad for the children. And I have seen some striking examples in that borough which appeared to indicate that this tradition was well founded."

In my experience, the greatest harm which has come to any class from taking too exclusive a diet of starches and sweets has come to those of sedentary habits. In so far as one requires a greater quantity of the vegetable foods, he needs much more active exercise and out-of-door life. Frequently one who can not eat a normal proportion of the vegetable foods when confined to his office or desk, can take a large increase with impunity when spending his time away from the depressing environment.

As Wendling has aptly said: "No animal except man can be tempted to do himself harm against his intelligence." Yet, men go on cultivating all sorts of pernicious habits; eating rapidly and improperly; overeating, and eating irregularly; eating foods chemically antagonistic; taking too much fluid with meals, habitually drinking ice water; living and sleeping in overcrowded rooms which can not have sufficient supply of fresh air; cultivating worries and anxieties to the highest degree; and being fatigued mentally and physically when ready to eat. I want to lay particular stress on this last-mentioned habit. Whenever there is either mental or physical fatigue too much emphasis can not be placed upon resting from twenty to thirty minutes before putting food into the stomach; and by resting I mean to make it absolute, by lying down and thoroughly relaxing physically and mentally, no reading, talking or planning. Then if after a half hour of such rest or sleep, one is still fatigued, it may be better to omit the meal entirely, rather than to subject the digestive organs to work which they would not do well. The ability to get perfect rest and relaxation is not easily acquired, but if persistently practiced day after day can be so perfectly attained that one will feel entirely renewed after a rest of ten or fifteen minutes.

These facts which I have reviewed can be readily

proved by all. If they stand uncontroverted, then it is the duty of every member of our profession to take immediate action. To do this successfully three things are necessary:

1. We must constantly revise and improve our methods of diagnosis so that we shall recognize the earliest tendencies toward unhealthy conditions. We need not wait until there is a fully developed digestive disturbance before we decide where the trouble is, for then the patient is able to recognize it for himself. To illustrate the advance made in recent years in making early diagnoses let me cite Bouchard,[12] in his discussion of the great prevalence of dilatation of the stomach. He says: "I still admit, through courtesy, that it is necessary to perceive the splashing below the middle of a line drawn from the umbilicus to the point nearest to the border of the left costal arch. But, in reality, this line is of little importance. Every stomach which is not retracted when it is empty is a dilated stomach. Dilatation is not distension. A dilated stomach is a stretched stomach, the cavity of which is apparent only when it is empty, because, though its walls then touch each other, it is no longer capable of diminishing its size by retraction." This is but one of many instances in which we now make earlier and better diagnoses than formerly.

2. The study of dietetics must be more carefully pursued. After quoting Donders, "whoever works at the development of our knowledge on food substances is working on a broad basis for the development of mankind"—Hemmeter[13] says: "Fortunately for us, many bright intellects have already applied themselves to this work, and our knowledge has been enriched by treasures of valuable information. But the well-advised special student can not fail to recognize that we have only entered a vast territory, and that the greater part of it remains to be explored. Even the small portion which by hard toiling is clearly our own is, we regret to say, far from being the common property of the profession—at least it does not seem to be taken advantage of, the profession at large failing to realize that a logical and individualizing diet is a more potent therapeutic factor than medicine."

If, on account of the many demands on his time, the general practitioner has neglected the study of that greatest branch of therapeutics, the study and application of diet and hygiene in the cure of disease, let me urge that no other subject to which he can give his attention will so surely and easily enable him to cope with so many diseased conditions as such a study. Proper nutrition is the very corner-stone to the health building.

3. There is necessity for a long siege of educational work with our patients and the general public, but especially with the younger portion of the community, either directly or through the parents. And this is the most difficult part of the problem. They must be taught that good health ought to be the rule and not the exception; that habits of wrong living are the causes for the great majority of ill health; that each person is mainly responsible for his own illnesses and that if he will he can prevent them. Especially must this be insisted on in families where tuberculosis has existed.

In every community the hygienic conditions are being improved, so that the dangers from the source of improper sanitation and lack of disinfection are being steadily lessened. This is due to the work being so well organized and prosecuted by our medical societies and boards of health.

Now, the task of showing that persons in a depleted condition are practically the only ones who are in danger of becoming tubercular is imperative with us. We must teach the public that there is immunity, and that it comes in the bodily conditions which exist in that general state which we call good health. For obvious reasons the work must be largely carried on by the family physician and the parents.

In conclusion, as Dettweiler[14] affirms that "The raising of the standard of food, betterment of its quality and quantity, are the unqualified requisites of every success, they are to-day the foundation and corner-stone of therapeutics of consumption," so I emphasize their place in prophylaxis.

EXTERMINATION OF TUBERCULOSIS.

Is it possible by proper dietetics and hygiene to exterminate tuberculosis? I believe it can be gradually accomplished, though there are two obstacles which are almost insurmountable, the first being the fact that as a rule people are not ready, while having a fair degree of health to make effort to preserve it. Those who have not suffered are not willing to be taught, and so will not readily co-operate in regulating the conditions which have to do with their own health, or the health of their children until they become ill. Then the poverty of many in small communities, and of the masses in the large cities, does not permit such foods and shelter, air and exercise as are required to produce healthful physical conditions. But each one must answer the question for himself, and as he thinks so will he work, and as he works so will the cause be hastened or retarded, for according to our present knowledge it depends not on any climate and its influence, nor on any community and its sanitation, nor on any one person and his work, but on the united efforts of all in every community.

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VARIOLA AND VARICELLA.*

M. A. AUSTIN, M.D.

ANDERSON, IND.

From a point of pertinent interest I deem it somewhat less than an impertinence to consider this subject, which within the last fourteen months has served to create disturbances of varied degree over different sections of Indiana.

The fact of some chicken-pox cases being present in this city, the mildness of some cases not requiring a physician until several members of a family were attacked, snap diagnosis from incomplete observation, and last but not least the ignorance and criminal negligence of some of the physicians in denying the existence of the disease as smallpox, has, with the refusal of the authorities to build a pest-house, notwithstanding the

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demands of the secretary of the Board of Health, W. T. Fairfield, served to keep up a desultory outcropping of cases in different parts of the city, until up to April 15 there had been reported and discovered 149 cases since the beginning of the epidemic.

We have positive evidences of the disease having been acquired from not only prolonged and continuous exposure, as in the same family, but also occurring after transient and slight exposure, from infected articles taken from one house to another, and one instance in which the only traceable exposure was from an open door through which were being carried articles to be destroyed.

One death has occurred, the patient being a baby 1 month old, who died during the second febrile or pustular stage.

The life history of this epidemic is identical with that of the more fatal forms—an incubation of twelve to fourteen days, a period of febrile invasion lasting four days, the fever-curve showing from 101 to 105 degrees, during which time there is experienced those never-to-be-forgotten pains in the limbs and occipito-lumbar regions. Nausea and vomiting as a rule accompany the period of invasion, and a chill generally serves to usher in the attack. About the fourth day the temperature drops to normal and the typical eruption begins to appear.

The initial rashes, as described by Osler, are of about the same frequence as in the more severe forms, occurring as a scarlet-red rash on the inner side of the thighs or on the sides of the chest, appearing on the second or third day and disappearing on the breaking out of the true eruption. This eruption in the discrete form appears first on the inner surface of the wrists and forearm, and along the forehead as small red spots. From here it spreads rapidly to other parts of the body, so that at the end of the first twenty-four hours from the fall of temperature, the distribution of the eruption can be definitely ascertained. Forty-eight hours later the eruption has passed through the papular stage, in which the characteristic shot-like feel might serve alone to anticipate a diagnosis. The sixth day finds opalescent papulo-vesicles, light yellow at the top, from a collection of serum, and these rapidly become purulent; with the change there is a settling down, flattening process in each and an umbilication of the center. This umbilication can be seen most plainly from the sixth to the eighth day, after which the pustule assumes a form rounded and globular from distension, and the easily ruptured roof gives escape to a varying quantity of a greyish-yellow pus.

On the occurrence of pus the temperature again rises and remains from twenty-four to forty-eight hours, unless means are taken to abort the absorption of the pus products by allowing their escape.

The eruption as to site is a universal one, including the palms of the hands and the soles of the feet, showing first on the forehead and inner surfaces of the wrist and forearm, and diffused most thickly over the head and face. The eruption is a symmetrical one, unaccompanied by moisture at any stage, while the lesions are progressive, appearing first as discrete red spots which rapidly become elevated from the surrounding skin, forming papules of a beefy red color, varying with the complexion of the different patients. The apex of these papules is rounded, the base not infiltrated, and they are of so firm consistence that they feel like shot beneath the skin.

The progress from the papular stage is with so great uniformity that forty-eight hours shows those papules to be transformed into vesicles with clear summits, and their roofs gradually flatten out and the flaccid walls allow a cupping of the center of each vesicle. Around the base there appears a trifle of induration, and a slight areola of a purple reddish color, extending scarcely more than a millimeter from the base. The change from a vesicle to a pustule gives to it a greyish-white color, the walls lose their flaccidity and the roof its umbilication, producing a lesion that is larger than the original papule, finally becoming a typical pustule, thin walled and easily ruptured.

The order of maturation corresponds to the positions of precedence: face and forehead, wrists and arms, body and limbs, then last the palmar and plantar surfaces. Should the roof of these pustules be destroyed and the pus removed, we find a depression corresponding to the base of the pustule in size and shape, shallow, with a slight induration at the base, and an uneven granular, easily bleeding floor with sloping edges.

This small granulating surface, when left exposed, becomes a hemorrhagic color and the depression is filled with a serosanguinous crust, easily disturbed and leaving a bleeding floor. When not disturbed the pustule, during the secondary fever, begins to dry up and a greyish-brown crust is formed, which in four or five days can be completely removed. Pitting depends on the severity of the disease.

Where the pustules are ruptured during the ripening stage and the pus expressed, a more or less granulating surface is allowed to heal and with proper precautions a transient stain will be the only remains. These stains or post-eruptive lesions, independent of pitting, remain a variable time up to three months. On the disappearance of the crusts the stains are of a salmon-pink color, getting darker after a few days, very noticeable on exposure to cold, showing then as a bluish-black through a thin and slightly corded area corresponding to the base and areola of each separate eruption.

Our smallpox diagnosis has been questioned in regard to chicken-pox, impetigo and the pustular eruption of syphilis. Not having had the marvelous cosmopolitan experience of some of our local physicians, I am unable to verify their telescopic conclusions in regard to the eruption being "Cuban itch," "Manila scratches," "Philippine impetigo," or "Arkansaw jiggers." Neither has it been my lot to have such close communion with some of the lower animals as to be able to make a snap diagnosis of "hog measles" or "dog itch."

Chicken-pox is an eruptive disease that may be only easy to differentiate from smallpox if one takes into conclusion the whole subject, yet one is hardly excusable in making a mistake if he takes into consideration the points of history, invasion and eruption.

Age of the patient can not be taken as a too weighty factor in the differentiation of one from the other. One of the most typical cases of chicken-pox I have seen occurred in an adult 38 years old, and during this epidemic. A case of chicken-pox in which the individual few pits are deeper than those which occur from mild smallpox is not uncommon.

The incubation period of varicella is generally shorter, averaging about ten days, while the smallpox cases have almost invariably shown the first symptoms on the fourteenth day.

The constitutional symptoms in some cases of the smallpox were so slight that they were no greater than

would be expected in varicella, but there was no immediate appearance of an eruption as in chicken-pox.

The diffusion and locality of primal appearance are similar in both diseases—the face and neck, arms and exposed surface—but in no instance do we see an adult with chicken-pox have an eruption on his palmar and plantar surfaces. In some of the cases of chicken-pox in children, where those surfaces offer little if any more resistance to the occurrence of a local infective process, we see the papules and vesicles occur. Neither have we had the croppy character in this epidemic, as we do in varicella; the eruption appears, the lesions progress through their characteristic papular, vesicular and pustular stages, then desquamate if the pustules are unopened. The chicken-pox cases show papules, vesicles and pustules at the same time over the same area, and the eruption shows a deeper infiltration at the base, a wider areola and in general a smaller sized papule than that of smallpox. In smallpox the invasion and severe constitutional symptoms last four days. In varicella twenty-four hours are sufficient to bring forth the eruption, and with the eruption there is an exacerbation of the febrile and systemic symptoms, something that is not found in smallpox. The papule of varicella is generally smaller, does not possess that shotty feel, and the progressive changes are more rapid.

There is an umbilication in both eruptions, but the time of appearance of each and their characteristics are hardly to be confounded. In variola there is an umbilication during the vesicular stage, which is not a permanent depression, disappearing on the occasion of the pustular change. In varicella the dipping down occurs during the close of the pustular stage and marks the point of beginning of the drying-up process which leads to crust formation and desquamation.

Very frequently in varicella the eruption is vesicular in its entire nature, and Holt speaks of it as being the rule instead of the lesions being progressive.

In contrast to the greater frequency of the eruptions on the face in smallpox, we have the greater number scattered over the back in varicella; they occur in the mouth and pharynx in both diseases, but differ in their characteristics here the same as on the outer surface.

Following desquamation in smallpox we generally have left a tubercle varying in size according to the depth and extent of the inflammation, this being a hyperplastic condition. In the severest cases, the inflammation is destructive instead of regenerative, and with the destructive process involving the papillæ, we get a pit or scar. In chicken-pox we have the site of the inflammation on the same level as the surrounding skin.

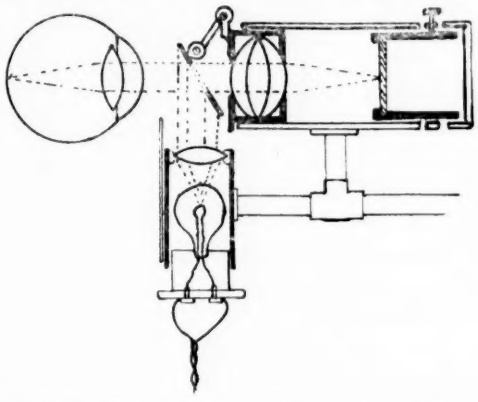
To attempt to differentiate the two diseases from the post-eruptive lesions alone, at a time greater than two weeks after desquamation, is something that without considering the entire case history might be rather difficult, were the two conditions to be of similar severity. we have noticed, though, that following the scaling of chicken-pox we invariably have a bright red spot left, while in smallpox, where the eruptions have been allowed to follow the entire course undisturbed, a similar discoloration is present, but in those cases where the vesicles are ruptured the resulting stain is of a bluish-black color.

In conclusion, a good rule to follow is the one that reminds you that typical cases occur rarely outside of books, when you are seeking them. The present epidemic is one which, either from a diminished susceptibility, a greater acquired or natural immunity, or a diminished virulence of the infection which has produced this spread of smallpox, discrete in form, modified in its systemic reaction and mild to a degree, unless after complications of which we have no knowledge now, only speaks volumes for vaccination and its results. Finally, there is no single pathognomonic symptom to either disease that can not be simulated, one in the other, yet in no case have I seen this similarity carried to an extent sufficient to make the differentiation indeterminable at some stage of the eruption.

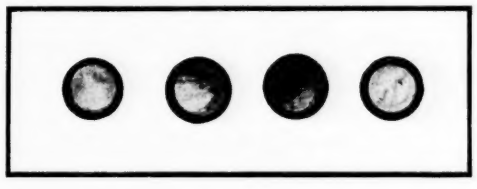
PHOTOGRAPHING THE EYE-GROUND.

SHIRLS JACKSON, M.D.
PITTSBURG, PA.

The illustration shows a photograph of the eye-ground and the instrument with which it was taken. As the drawing indicates, the instrument is essentially a self-illuminating ophthalmoscope, where a little camera—practically an artificial eye—is substituted for the observer's eye. The patient's head is fixed immovably in the operating-chair, to which the movable arm of the camera is attached. The camera is swung in front of the patient's eye, and is rested firmly upon the cheek



with an intervening pad for thermal insulation. The cap at the back of the plate-holder is removed, and with the pupil dilated and the unobstructed eye fixed upon a remote object, a faint inverted image of the fundus may be focused upon the ground glass. The movable collar is fixed by the screw to mark this point upon the scale of diopters, from which a rough estimate of the refraction may be had—a rough optometer that might be improved. As the collar insures a return of the plate-holder to the focal point, the holder is removed, and with all lights extinguished excepting a



ruby lamp, a photographic dry plate is inserted in place of the ground glass; the holder covered with the cap is replaced; and the camera-light turned on. (Fourteen to twenty-eight seconds with blonds. Only the disc appeared in brunettes. The actinic value of the color of the eye-ground governs the exposure.) The negative is stored in a light-tight box, or developed at once.

I regret to say that the failures are both numerous and vexatious, and that the eye easiest to photograph is one with the light perception greatly diminished or entirely lost. The picture shown in the illustration was of such an eye.

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STAPHYLOTOXINS.

The poisons of the staphylococci have received but little notice. When one considers the great variability of the virulence of different races of staphylococci, occurring as they do now as harmless saprophytes, again as pathogenic agents of a great power, it certainly is remarkable that so little attention has been paid to the production of toxins by these organisms under different circumstances. Neisser and Wechsberg[1] have in a measure met this want by an exhaustive study of the staphylotoxins. As pointed out by Krauss[2] staphylococcus aureus produces a substance which dissolves red blood-corpuscles, i. e., acts as a hemolysin. Neisser and Wechsberg studied the action of this hemolysin on the blood-cells of the rabbit. Its production appears to be quite independent of degree of virulence, and it is destroyed by heating to 56 C. for twenty minutes. It was found that typical staphylococcus aureus and albus produce the same hemolysin; further, that there are staphylococci which do not produce any hemolysin and which probably constitute a distinct group without any pathologic significance.

Many blood cells are not dissolved while bathed in serum. It was found that serum protects other corpuscles as well as its own from the action of staphylolysin, i. e., it normally contains an antistaphylolysin. Normal human serum contains antistaphylolysin, although in varying degrees of activity. Whether this substance is present as the result of staphylococcus infections or otherwise has not been determined definitely. Antistaphylolysin is also obtainable by immunization, as two or three subcutaneous injections of an active toxin produce an efficient antitoxin. By suitable experiments the authors determined that staphylolysin like diphtheria toxin and tetanolysin consists of a mixture of toxins of varying avidity.

Van de Velde[3] demonstrated that staphylococcus pyogenes contains or produces a substance which destroys leucocidin. This observation has received confirmation from various sources, and Neisser and Wechsberg demonstrated again the presence of leukocidin in filtrates of staphylococcus cultures by means of an interesting and ingenious method, the principle of which is the following: normally leukocytes take a certain amount of oxygen from the surrounding medium and this in sufficient quantity to reduce and render colorless substances like methylene blue; when the leukocytes in a fluid are killed reduction of the methylene blue does not take place if the fluid has been kept sterile. In this manner they measured accurately the leukocidal action of leukocidin. This substance is also destroyed by heating at 56 C. for some minutes, and experiments with antileukocidin and leukocidins obtained from various races of cocci led to the conclusion that the leukocidins are identical. Normal serum of horse and of man contains antileukocidin, which may be produced also by immunization. During immunization infarcts appeared in the kidneys, marked by great accumulation in the vessels of dead and disintegrating leukocytes, the result of the action of the leukocidin.

It has thus been conclusively shown that staphylococci produce at least two distinct toxins, namely staphylolysin and leukocidin. Hence these microbes belong in the group which produces soluble poisons, and this fact must be borne in mind in the consideration of the pathology of staphylococcus infections.

1. Zeitschr. f. Hyg. u. Infektionskr., 1901, xxxvi, 299-349.
2. Wiener klin. Woch., 1900, 3.
3. La Cellule, x, quoted by Neisser and Wechsberg.

HEATED SERUM TO PREVENT INFECTION.

The serum of the normal blood has been found to contain a remarkable ferment, or group of ferments, which, when fixed by certain specific substances to bacteria and to cells of various kinds, may cause their destruction and solution. This substance or group of substances was called alexin by Buchner; it is destroyed by heat for some minutes at 55 C. Bacteriolysis, hemolysis, and cytolysis in general have been made the subject of many exceedingly interesting investigations during the past three or four years, and certain general principles have been established in regard to the actions of serums of various kinds. Thus it has been found that a large number of antiserums may be produced by first injecting animals with the special cells or bacteria or other substances upon which it is desired that the antiserum should act. The reactions that occur in experiments of this kind are exceedingly complex, and the resulting phenomena correspondingly difficult to explain. Some time ago Wassermann advanced the claim that the principal reason for the little success obtained by the use of bactericidal typhoid serum depended on the circumstance that the serum did not contain enough alexin. During bactericidal activity alexin is actually consumed, so that while an animal may be protected against a certain quantity of typhoid bacilli, it is killed when an excess of this quantity is introduced. In order to meet this emergency Wassermann concluded that more alexin should be added to the immune serum, and he found that by adding normal ox serum he could protect guinea-pigs against an otherwise fatal dose of typhoid bacilli. But it is not so certain that this effect is due to the alexin normally present in ox serum.

Besredka[1] suggests that it may be due to the agglutinating effect of the ox serum upon typhoid bacilli, which are then more easily destroyed. In order to demonstrate whether the alexin in the ox serum actually increases the efficiency of antityphoid serum, the experiments should be repeated after having heated the ox serum. Metchnikoff and his pupils have found that heated normal serums, in which the alexin has been destroyed, do not thereby lose all their power. Heated serum injected into the peritoneal cavity twenty-four hours before the bacteria may save guinea-pigs from twice the fatal dose of cholera germs or typhoid bacilli. Still holding to the phagocytic theory they explain this result as due to the stimulating action which they have observed heated serum has upon the cells that act as phagocytes and also as due to the agglutination of the bacteria by the heated serum. For these reasons Metchnikoff and Besredka suggest that heated ox serum might be used with advantage in operations on the peritoneal cavity. The peritoneum might be bathed in a quantity of serum, and after the operation a certain amount could be left in the cavity in order to agglutinate any microbes which might have been introduced and to stimulate the phagocytes. Further researches in this line may give the surgeon more definite basis for action.

1. Ann. de l'Institut Pasteur.

THE DIAGNOSTIC VALUE OF THE GRUBER-WIDAL REACTION.

The thorough clinician is careful not to attach undue or exclusive importance to any one or even several symptoms in arriving at a diagnosis, but he correlates all of the evidence, positive and negative, in a given case, and considers all of the possibilities, before reaching a definite decision. Therefore, when the Gruber-Widal serum-reaction was proposed as a means of diagnosis, he knew better than to rely upon it infallibly, and experience showed that the manifestation, which it was appreciated usually does not occur before the fifth or sixth day, occasionally fails to appear in cases of undoubted typhoid fever, that at other times it appears only late, that at still other times it may be present at one examination and absent at another, and that now and then it is yielded when there is no real evidence that the case is one of typhoid fever. Some of these irregularities in results are related to the dilutions of blood-serum employed and to other details in technique, but apart from this it may be conceded that there are exceptional cases of typhoid fever in which the reaction fails to develop, as well as exceptional cases of other disease in which the reaction does appear. There has been some discussion as to whether the reaction is one of infection or one of immunity, but the evidence is really not decisive that it is either. Nevertheless, it seems likely that it is specific and represents a result of the reaction between the invading micro-organism and the attacked organism. A similar specific reaction has been described as belonging also to a number of other bacteria.

There has of late become evident in some quarters a tendency to belittle the value of the Gruber-Widal reaction in the diagnosis of typhoid fever, but apparently without good reason, if one may judge from the statistics that are reported. Thus Dr. C. F. Withington[1] states that the reaction was obtained in all but 10 of the 253 cases of typhoid fever in the Boston City Hospital from May 28 to November 28, 1900. The negative decision was based not upon a single examination, but upon frequently repeated observations, and as a result of which it was found that the reaction sometimes appeared exceedingly late, as late as the twentieth or the twenty-fifth day. The reaction was absent in six other cases in which the diagnosis of typhoid fever was made, although the evidence was not complete. The method employed consisted in drawing a few drops of blood from the patient's ear into a small section of glass tubing sealed at one end by heat and left open at the other. After the serum has separated, one drop is mixed with ten drops of an active culture of typhoid bacilli from twenty-four to thirty-six hours old. This mixture is studied side by side with the unmixed culture. The reaction is considered positive if immobility and clumping take place in the course of half an hour.

Dr. G. B. Shattuck reports, from the same hospital, 65 cases seen during the succeeding four months in which a clinical diagnosis of typhoid fever was made and in only three of which the Gruber-Widal reaction was not obtained.

SENILE CHOREA.

It is not surprising that confusion should arise in the minds not alone of the student but also of the practitioner of medicine from the application of the name chorea to a number of, in part, different affections, and there is a distinct opportunity for reform in this direction. The designation may properly be retained for the classic disorder first fully described by Sydenham, which is an acute, self-limited, probably infectious disease, while other names should be devised for the more chronic disorders variously known as congenital or hereditary or senile chorea, which are associated with organic changes in the central nervous system. Spasmodic or convulsive tic is sufficiently distinctive of the conditions sometimes designated habit-chorea and the jerky involuntary incoördinate movements of hysteria require no specific designation. Prehemiplegic and posthemiplegic chorea represent merely irritative motor disturbances dependent upon various disorders of the brain.

Albuminuria is no longer considered synonymous with nephritis nor spasm with epilepsy, and in the same way, all conditions attended with irregular, involuntary, inco-

1. Boston Med. and Surg. Jour., May 9, 1901, p. 442; also JOURNAL A. M. A., xxxvi., p. 1501.

ördinate movement should not be more or less indiscriminately grouped together as chorea. Some differences of opinion have also arisen with regard to some of the subdivisions of chorea. Thus so-called hereditary chorea and senile chorea are by some considered as different, and by others as identical affections. The qualification "hereditary" in medicine would seem to be as unfortunate as it is unnecessary, particularly in the field of diseases of the nervous system. In the first place, disease as such is not inherited, that which is transmitted from parent to child being merely a certain cellular type and thus at most merely a predisposition to disease; and this is the rule and not the exception. In the next place, even so-called "hereditary" disease must begin in some ancestor, and the instances are not few in which no hereditary transmission can be detected. The influence of heredity must, therefore, be looked upon as but incidental and in a sense not essential.

To the comparatively small number of cases described as senile chorea, H. Bischoff[1] adds the report of another. The patient was a woman 73 years old, presenting choreiform movements involving the entire left side of the body and persisting for five years until death. The movements, which rather resembled those of athetosis, were beyond control of the will, and ceased during sleep. Speech was interfered with, but intelligence was unaffected. There had been no history of rheumatism; there was no cardiac lesion; and there was no knowledge of hereditary taint. The symptoms had made their appearance after emotional disturbances, but this, it was thought, may have been a manifestation rather than the exciting factor of the disease. Headache, however, was a prominent symptom. Tuberculosis of the vertebræ also was present. Macroscopic and microscopic examination of the central nervous system after death disclosed no significant lesion, although there were present recent hemorrhages in the optic thalamus, and diminution in the number of ganglion-cells of one-half of the spinal cord such as may be found in the normal cord.

VITAL STATISTICS IN ILLINOIS.

As yet vital statistics are very imperfectly registered in most parts of this country and it is a satisfaction to note the enactment of measures that will insure a better record in the future. Such a one was passed by the last session of the Illinois legislature, which has just adjourned. It provides for the registration of births, allowing, as it should, a small fee for the reporting of the same, and providing penalties for its violation. Heretofore the return of births in Illinois has been very defective, but the present law gives to the health authorities the means for insuring a correct registration after this year, the law for some reason having been made to go into effect Jan. 1, 1902. It is probable that the deficiency in birth reports has been heretofore more largely among the well-to-do classes and native Americans than among the poorer and foreign born. At least this would appear probable from the published lists. It is to be hoped that American mothers will make a better showing under the new law.

1. Deutsches Archiv für Klin. Med., 69 B., 3, 4, H., p. 404.

THE PATHOLOGIC EXHIBIT AT THE ST. PAUL MEETING.

This eminently practical feature of the ASSOCIATION promises to exceed both in interest and in size that of last year. There will be some exhibits illustrative of research and experimental work. Effort has been made by the Committee, with most gratifying success, to secure groups of specimens bearing upon particular phases of pathology. Systematic endeavor will be made to demonstrate the collection of specimens to groups of visitors. It may be stated without fear of controversy that the Exhibit will prove most entertaining and exercise a potent educational influence upon the meeting. The number of exhibitors will almost double that of a year ago. They will come chiefly from the states contiguous to the place of meeting, but the south, east, west, and even the Canadian profession will have creditable representation. The location of the Pathological Exhibit in the Ryan Annex, near the Headquarters, will insure a large attendance. The room is seventy-five feet square, has fine light upon two sides, is situated on the fourth floor and has excellent elevator service. No member of the ASSOCIATION should fail to visit the Exhibit. Aside from the great advantage to be gained by its inspection, it is due the large corps of exhibitors who for the love of medical science, have labored "without money and without price" for the success of this most praiseworthy undertaking.

TO HASTEN DELAYED RESOLUTION.

While the mechanism of counter irritation in its various forms is not understood, the fact of its usefulness is not to be denied. The most reasonable explanation, though it is but indefinite, is that an influence, probably of a stimulating character, is exerted reflexly from the surface through the nerves and vessels upon the circulation and metabolism of the diseased area. Such an effect may be desired in the presence of a number of torpid morbid processes, such as an unresolved pneumonia, and for this purpose it is not unusual to apply blisters or iodin. Dr. Charles I. Macalister[1] has observed frequently that resolution followed closely upon exploration of the chest with an aspirator needle in cases in which there has been a suspicion of pleural effusion, although only solid lung is encountered, and he considers the subsidence of the temperature and the subsequent clearing up of the consolidated area as not merely accidental. Similar results have been observed in cases of distinct croupous pneumonia and of pneumonic consolidation of long duration. In carrying out the procedure a fairly large needle or trocar should be employed. French clinicians have advised, in order to bring about resolution of chronic pneumonic conditions, the excitation of a sterile abscess in some indifferent situation, though preferably in proximity to the affected organ, by means of the subcutaneous injection of oil of turpentine. This is thought to effect its purpose not alone through its counterirritant influence, but also through the leukocytosis to which it gives rise.

1. Liverpool Medico-Chir. Jour., March, 1901, p. 216.

THE VERMIFORM APPENDIX THE CONSERVATORY FOR THE COLON BACILLUS.

From experiments upon animals Kohlbrugge[1] has learned that when the stomach is empty it may be quite sterile, whereas during digestion it is possible to cultivate numberless bacteria from the ingesta. The small intestine when empty is also sterile; wherever the ingesta occur there bacteria are also found. This periodical cleansing of the small intestine he designates as autosterilization. He never found the cecum or colon sterile, the bacterium coli commune being the predominating variety and especially numerous in the cecum. The cecum is therefore the breeding place of the colon bacilli, which are peculiar to the individual and persist from the earliest extra-uterine period till some time after death. The cecum is the brood-oven of the body and here develop the bacteria, which are our constant messmates. That these bacteria may be of some physiologic importance is not unreasonable. The vermiform appendix, not subjected to the peristalsis which in violent diarrhea may empty the cecum and colon, may serve to maintain the culture of colon bacillus peculiar to the body. Instead of being an useless and dangerous organ the appendix may be of great importance in keeping alive our bacterial messmates, which in their turn influence digestion favorably and keep out foreign invaders. The appendix, in other words, secures for us stability and permanence of our colon bacilli. That much of surgical and of general physiologic importance remains to be learned in regard to the intestinal bacterial flora is not to be doubted, but it is not likely that the possible importance of the appendix suggested by Kohlbrugge will lead soon to greater conservatism than now obtains in respect to the removal of this organ.

1. Centralbl. f. Bakt., 1901, xxix, 571-574.

THE "JURY LICENSE" AND MEDICAL PRACTICE ACTS.

In some western and central states an appeal has recently been made to the courts to reverse the decision of the state boards of medical examination. Juries have in some cases found for the plaintiffs and against the board, thus introducing a new factor into the question of the judgment of medical qualifications. It would seem that a medical practice act, unless declared unconstitutional by the highest court, would be the supreme law on the subject, and the function of a jury would hardly include the giving of licenses to practice medicine. An appeal to the courts ought, if possible at all, to be limited to the question of the proper execution of the law by the examining board. Some puzzling questions might arise, but when we read of a Montana judge instructing the jury that they were not called upon to determine whether the examination justified the action of the state medical examiners, but they must determine from the evidence whether the plaintiff was qualified to practice medicine, it appears to us that his ruling is open to criticism, even by those who are not lawyers. By such a ruling, a jury license to practice might become the favorite qualification and the statute practically a nullity. If the courts and juries of laymen are to settle the question of medical qualifications, we may look for some queer results, and the question naturally arises how would it suit if lay juries were to decide on the merits of candidates for admission to the bar? They are as well fitted for this function as the other. Of course this case can go up to the highest court and it is fortunate that it is so, for nothing short of this could be satisfactory after the instruction that a lay jury is the ultimate judge of fitness to practice medicine.

FLATFOOT AS A CAUSE OF PARESTHETIC MERALGIA.

Since the original description by Bernhardt, in 1895, of a condition attended with burning pain in the distribution of the external cutaneous nerve of the thigh, a considerable number of cases have been recorded. Although at times no underlying cause is apparent, the disorder must be looked upon rather as a symptomatic manifestation than as a clinical entity. It seems likely that changes in the nerve itself, which in several places is so situated as to be exposed to the risk of injury, may account for the symptoms in some instances. Thus, it may be subjected to mechanical influences at its point of emergence from beneath the psoas muscle; at its point of reflection immediately below the anterior superior iliac spine; in the fibrous canal of the fascia lata, by which it is enclosed, and at its point of emergence from this canal. In addition to traumatism, the disorder has been observed in association with syphilis, alcoholism, infectious diseases, pregnancy and gout, as well as a number of diseases of the nervous system, such as tabes, general paralysis, hematomyelia. Further, J. Pal[1] reports six cases in which paresthetic meralgia was associated with flatfoot, and, while he does not contend that this is the only etiologic factor, and he realizes that the affection may be of varied origin, he nevertheless believes that simple mechanical injury of the nerve is present in the majority of cases. The disorder may arise in an individual previously spare and of slight skeletal development who acquires a certain degree of obesity. The sensation of burning pain appears under such circumstances when the patient is erect and walks about, supporting the body principally on the inner aspect of the foot and securing relief in rest and in walking on the outer border of the foot. Relief will then also follow appropriate orthopedic measures, such as a suitable support for the arch of the foot. The relation between flatfoot and the paresthetic condition is believed to reside in compensatory overaction of the hip-joint as a result of the changes in the position of the foot, with a remote mechanical effect upon the external cutaneous nerve. Relief can be hoped for from orthopedic appliances only in recent cases, before structural changes in the nerve have taken place.

1. Wiener Med. Woch., 1901, No. 14, S. 665.

THE PLAGUE AT SYDNEY.

The report of the Department of Public Health of New South Wales on the "Outbreak of Plague at Sydney, 1900," is a very interesting document. The fulness of detail, the excellent illustrations, the condign discussion, and the prompt publication speak well for the state of organization of the department and for the energy and ability of the chief medical officer, Dr.

J. Ashburton Thompson. The epidemic consisted in the attack with plague of 303 persons between January 19 and August 9, of whom 103 died. Of the multifarious branches of work entailed by the epidemic and adequately set forth in the present report particular attention may be directed to the efforts to trace the manner of infection and the mode of spread of the disease. It seems to be quite conclusively shown that an epizoötic disease among rats preceded the first case which occurred in man, and bacteriologic examination showed that the epizoötic disease among the rats was bubonic plague. Further that the area over which the epizoötic extended was practically co-extensive with that over which the plague was observed in man. This epizoötic died out at the same time as the epidemic ceased. The general conclusion based upon the evidence thus outlined is that "the epidemic was caused by communication of the infection from rats to man." As to the manner of transmission from rats to man, but little is said, as the opportunities for careful investigation of this point were not favorable. In seven of the cases distinct marks of flea-bites were noted, and in two cases smears from the little vesiculo-papular lesion showed bacilli morphologically resembling the B. pestis. Fleas from infected rats were also examined and in one the presence of plague bacilli was demonstrated definitely by means of inoculation into a guinea-pig. Should it eventually be established to general satisfaction that plague is communicated to man by means of fleas then it would seem from analogy that there is nothing inherently unreasonable in the theory of a bacterial origin of yellow fever although the disease is transmitted by mosquitoes as shown by the brilliant researches of Reed and his associates. From careful consideration of the facts of the Sydney epidemic it also seems clear that the disease was not "catching" in the ordinary sense of the word, and further that it was not communicated in any important degree by fomites. Rat-killing was instituted on a large scale; a special rat-catching staff ultimately reported that it had destroyed 38,600, and the grand total killed by authority is 108,308. Of course, private persons killed a great number also. It is urged strongly that removal of all conditions favoring harborage and breeding of rats in and near occupied premises be recognized and instituted as an important practical means of protection against epidemic plague. This means steady and faithful carrying out of certain well-known details of municipal sanitation, and specific recommendations are made to meet the local conditions in Sydney based upon the principle that plague is diffused by rats. "There is no royal road to the prevention of plague," and there is no doubt that the health officers of our large cities may profit much by a careful study of the Sydney epidemic and the experience of those who took active part in the struggle successfully waged against it there.

Trusses in the Fifth Century.—Professor V. Deneffe, of Ghent, has written several works on surgery and medicine in antiquity, among them "Ancient Dental Protheses," and "A Gallo-Roman Surgeon and Oculist in the Third Century." He has recently published an account of some iron trusses found in the tombs at Euville and Devise, dating from the fifth to the seventh century.

Medical News.

ALABAMA.

Dr. Emmet K. Moon, Anniston, has been elected physician of Calhoun County, vice Dr. Thomas W. Ayers, resigned.

The proposed hospital in Montgomery secured in two days' work nearly half of the amount required to guarantee its construction.

The Medical College of Alabama held its forty-second annual commencement in Mobile, April 3, graduating a class of 38. Dr. Charles A. L. Reed, president of the AMERICAN MEDICAL ASSOCIATION, delivered the doctorate address.

Southern Quarantine.—During the recent smallpox scare in the South, it is said that the mayor of a small town in Alabama took the extraordinary precaution of appointing all the conductors on city and suburban lines as quarantine officers, and all persons coming from adjacent infected districts were required to show a health certificate before being allowed to enter the city.

CALIFORNIA.

Pasadena Board of Health.—The newly appointed Board of Health has organized and elected Dr. F. F. Rowland health officer.

Japanese Maiden Graduate.—Miss Una Yone Yanagisawa is one of the 28 graduates in medicine in the State University. She is also a B. A. of the class of '98 of the same institution.

The death of the white woman in San Francisco on April 25, which was reported to have been due to the plague and mentioned in THE JOURNAL of May 25, was, on investigation, proved not to have been the result of that disease.

DISTRICT OF COLUMBIA.

John Baudat, Washington, who pleaded guilty to practicing medicine without a license, was released on his own recognizance.

John A. Dougherty, Washington, was arrested May 13, charged with practicing medicine without a license. He was fined $5 which was paid.

Casualty Hospital, Washington, has elected Dr. John R. Wellington, chief of the surgical and emergency staff, and Dr. Jesse J. Shoup, chief of the eye, ear, nose and throat department.

Georgetown University Medical Department held its fifty-second annual commencement May 21 and graduated a class of 21. Dr. Joseph Eastman, Indianapolis, delivered the address, choosing for his subject "The Evolution of Surgery."

ILLINOIS.

Dr. John C. Corbus has been re-elected superintendent of the Illinois Eastern Hospital for the Insane at Kankakee.

Dr. Frederick C. Winslow, Jacksonville, has been appointed superintendent of the Hospital for the Incurable Insane, which is now nearing completion, at South Bartonville, near Peoria.

Julia F. Burnham Hospital, Champaign, is a beneficiary to the extent of $24,000 by the will of Miss Ida Harris, of which $4,000 is to be devoted to the erection of a consumption ward.

Chicago.

Dr. Harold Jacobsen sailed for Europe May 4, on the *Graf Waldersee.*

Dr. E. C. Dudley was appointed a member of the Board of Education, May 27.

Dr. Evert E. Tracy has been appointed physician to the State Penitentiary at Joliet.

Dr. Norval H. Pierce has been appointed otologist to the Illinois Charitable Eye and Ear Infirmary.

Dr. Joseph C. Beck has been elected professor of diseases of the ear, nose and throat, in the Chicago, Eye, Ear, Nose and Throat College.

Drs. Edward T. Dickerman and Charles H. Beard have been appointed on the staff of the Illinois Charitable Eye and Ear Infirmary.

Marshall Field has given the Chicago Home for Incurables ten lots adjoining the ground now occupied by the home. The land is valued between $40,000 and $50,000.

Dowie and three disciples have been held to the grand jury by the coroner's jury, pending the investigation of the

death of Mrs. H. W. Judd, whose husband is among the indicted.

Hospital Gift Refused.—The offer of two Swedish-Americans in San Francisco to give $25,000 each for the erection of a hospital in Lake View or other suitable location in Chicago, has been refused by the Swedish Evangelical Mission Board unless the hospital is established in Bowmanville.

Dr. N. Senn, accompanied by Dr. D. R. Brower, expects to sail for Bremen on the *Saragossa*, July 4, for a round-the-world trip which he designates "A Race Against the Sun." He goes via Moscow, the Siberian Railway, Vladivostock, Corea, China and Japan, and expects to arrive in Chicago about October 1.

Dust, Street Sprinkling and Health.—Last week furnished an object lesson in the necessity for strict and strenuous supervision over street sprinkling. Within twenty-four hours after the rain ceased to fall the streets were dry, but there was no sign of a sprinkling cart until the air was full of dust and the seeds had been sown of hundreds of cases of influenza, bronchitis and pneumonia—to say nothing of consumption.

Deaths of the Week.—Nearly 12.5 per cent. fewer deaths were recorded last week than the week previous, and the annual mortality rate of the week was only 12.13 per 1000 of the estimated mid-year population. It is not probable that the total deaths for the month will much exceed 2000. The deaths numbered 409, of which 51 were due to pneumonia, 52 to tuberculosis, 35 to heart diseases, 31 to nervous diseases, 30 to acute intestinal diseases and 25 to violence.

The College of Physicians and Surgeons granted the medical degree to 160 students on May 28. The doctorate address was delivered by Dr. Joseph M. Mathews, of Louisville, Ky. The exercises were followed by a banquet at the Auditorium Hotel, in which 300 alumni of the college participated. Dr. William A. Pusey acted as toastmaster. Among the speakers of the evening were President Draper, Drs. J. W. Birk, Harold N. Moyer, Alexander H. Ferguson and Joseph M. Mathews.

The Smallpox Situation.—The thing most dreaded by the Department of Health is a change in the type of the smallpox; if this should occur, serious results are inevitable. The disease has been so mild that the contagion must be spread to an unknown extent from cases that have not come under observation. No person who is not positive as to vaccinal protection can afford to postpone vaccination before the weather gets too hot for the operation and before the disease changes to a malignant character.

INDIANA.

Fort Wayne Medical College.—At a meeting of the faculty of this college, May 16, Dr. Christian B. Stemen was appointed dean, and Drs. Graylord M. Leslie and Warren D. Calvin were made members of the faculty.

To test the medical law, a magnetic healer of Bedford has been arrested, charged with practicing medicine without a license. A motion was made to quash the indictment, but in the circuit court the medical law was sustained.

Indianapolis is non-liable to non-paying patients treated at the City Hospital, for any injuries they may suffer through the negligent and unskillful treatment of the hospital surgeons. The Appellate Court has so decided in affirming a judgment refusing Josie E. Williams the damages she asked for alleged malpractice at the hands of one of the internes at the hospital three years ago.

Qualifications of Osteopaths.—The State Board of Medical Registration and Examination, has adopted the following resolution. "Whereas, by the amendments of 1901 to the medical act the State Board of Medical Registration and Examination may grant limited certificates which will authorize the proper clerk to issue a license to practice osteopathy only, and whereas it is provided by the law that 'such certificates shall be issued on the same terms and conditions as others, except that the applicant therefor shall not be required to pass an examination in materia medica, nor shall the college from which he presents a diploma be required to conform to the standard fixed by said board as to instructions in materia medica, but such college shall so conform in all other branches of instruction,' therefore, 'Resolved, That all applicants for registration to practice osteopathy in the State of Indiana and the colleges from which they procured their diplomas, must comply with the schedules of minimum requirements in force at the time of application except in so far as pertains to materia medica."

MARYLAND.

Dr. I. Edmondson Atkinson has been appointed a member of the State Lunacy Commission.

Dr. Irving J. Spear, for the past year resident physician at Bay View Hospital, Baltimore, left May 29, for a year's study in Berlin and Vienna.

Dr. C. L. G. Anderson, major and surgeon of the 29th infantry, arrived at his home, Smithsburg, Washington county, from the Phillippines May 21.

The Woman's Medical College, Baltimore held its twentieth commencement May 31 and graduated 7 women, Lois Jones, Pittsburg, taking the highest honors.

Mr. Edward H. Hume, who graduates next month from Johns Hopkins, has been awarded the Garrett international fellowship in pathology at Liverpool, lately endowed by Mr. W. W. Johnson for the study of tropical diseases. Mr. Hume's appointment is especially appropriate, as he expects to practice medicine in India, where he has lived for many years.

NEW HAMPSHIRE.

Dr. Russell Wilkins, Concord, has been chosen president of the Concord Board of Health.

Hampton is the latest town to object to the compulsory vaccination of school children. The objection is on the ground that as the disease has never appeared in the vicinity, vaccination is unnecessary and the order arbitrary.

A national bank at Keene is reported to have secured a sterilizer through which all money received at the bank is to pass. The reason for this precaution is the prevalence of scarlet fever in the town. The report, however, does not refer to the sterilization of the hands which handle the money, nor is it stated whether or not the money is first sterilized and then handled or vice versa.

Examination for License to Practice.—The regent of the State Boards of Medical Examiners announces that the next examination for licenses to practice medicine in the State of New Hampshire will be held at the State House, Concord, on Tuesday and Wednesday, June 11 and 12, 1901, beginning at 8 o'clock a. m. All unlicensed physicians who were not in practice in this state on and before March 16, 1897, must pass the examinations in order to receive a license to practice legally their profession. No licenses issued by states, or diplomas from medical colleges, are endorsed by the regent in place of examination, with one exception, namely, graduates from Dartmouth Medical School may receive a certificate on presentation of diploma, if said diploma shall have been issued between the enactment of the medical law, March, 1897, and Jan. 1, 1903. All information regarding the examination will be given by the Department of Public Instruction, State Library, Concord.

NEW JERSEY.

Dr. Samuel A. Helfer, Hoboken, has been unanimously re-elected president of the local board of health.

The County Hospital at Mount Holly, on May 17, was struck by lightning, which set fire to a room, and frightened the patients. The flames were extinguished before much damage was done.

Smallpox Still Prevalent.—Smallpox which broke out some time ago in Gloucester is still prevalent there. On May 20 another new case was taken to the municipal hospital. The public schools, which it was hoped would be opened on May 20 are still closed for an indefinite period. On May 21, one patient died of the hemorrhagic form, and on May 23 two other persons perished. Fearing that the disease might get a foothold in Camden the health authorities of that city have placed a partial quarantine against Gloucester. This order will prevent undertakers from going to Gloucester and returning with their vehicles. The order was issued by the board of health and signed by Dr. H. H. Davis, the president, and Eugene B. Roberts, secretary. During the past week, a case of smallpox developed in Camden, and it is believed the patient contracted the disease in Gloucester, where she had visited. A few days ago Medical Inspector Leavitt of Camden deported a boy to his home in Gloucester, and it is said that the boy has since developed smallpox.

NEW YORK.

Dr. Harriet M. Doane, Fulton, sailed on the *Teutonic*, May 29, for a year's study in the hospitals of Europe.

Dr. H. R. Bedell, Watervleit, was the successful candidate in the examination for interneships of the Ellis Hospital, Schenectady.

Dr. John Archibold has been re-appointed health officer of Cohoes, on a salary of $900, to which is added a monthly allowance of $30 for medicines.

New York City.

Governor Odell has appointed Joseph Simonson, of Richmond County, as quarantine commissioner of the port of New York in place of Hugh McRoberts.

Smallpox.—This disease continues to be very prevalent, and, to make matters worse, it has been charged that two physicians have been guilty of deliberately violating the law and jeopardizing the public health by concealing cases of the disease. Those so accused have been summoned to appear before the board of health and explain, and if there is a proper foundation for these charges, they will be prosecuted. A nurse in the ward of the Harlem Hospital has developed the disease, and in consequence one physician, two nurses and sixteen patients are quarantined.

Mount Sinai Hospital.—The new edifice for the Mount Sinai Hospital, the corner-stone of which was laid May 22, in the presence of several thousand persons, will cost about $1,335,000, and is to be completed in two years. The site alone cost $532,000. There will be ten distinct and absolutely fireproof buildings, connected by covered corridors, each building having five stories. The medical and surgical pavilions will each accommodate 160 beds, and there will be a children's ward of 60 beds. The building at present occupied by the hospital was erected in 1870.

Another Dowie Death.—J. Luther Pierson, who has been placed on trial on the charge of wilful neglect to procure proper medical attendance for his 2-year-old daughter, in consequence of which she died. has been sentenced by Judge Smith Lent to pay a fine of $500 or to imprisonment for 500 days. The case was tried by jury, and the latter in bringing a verdict of guilty added a recommendation for mercy. Mr. Pierson declined to pay the fine, and said he would appeal the case, asserting that it was an infringement of his constitutional rights to hold any religious belief he desired.

The Smoke Nuisance.—Although soft coal continues to be used more and more, and the smoke nuisance is assuming unpleasant proportions, the inspectors of the Health Department declare that they are almost powerless in the premises. On two occasions the president of a certain brewing company has been arrested on the charge of maintaining such a nuisance in open violation of the law, but in the face of very complete evidence the police magistrates have seen fit to discharge him. The same farce is repeated in other cases, so that not only the inspectors but the legal counsel of the department have declared their inability to cope with the problem unless the police courts are so reformed that political "pull" will not have much influence.

OHIO.

Bethesda Hospital, Cincinnati, was dedicated, May 16, free of debt.

Dr. Philip S. Rieg, Toledo, returned May 18, from a two-months' pleasure trip in Europe.

Dr. William Knight, Cincinnati, sailed for Glasgow on the *City of Rome*, June 1. He expects to spend four months in visiting European hospitals and clinics.

The Mayor of Cleveland, forgetting that medieval times are past has promulgated a decree that, while he is mayor, there shall be no compulsory vaccination in his city.

Opening of the Branch Hospital for Consumptives.—On May 16, the board of Trustees of the Cincinnati Hospital formally opened the Branch Hospital for Consumptives at Lick Run. Patients were first received at this institution in 1897, but only lately large appropriations have made the affair the success it is. About two hundred visitors were present. One of the important features is the establishment of solaria in connection with each of the new buildings so that the patients are enabled to take sun-baths even in winter. The establishment of separate buildings is to keep apart the patients afflicted with incipient phthisis, and those with the graver forms of the disease. After an inspection of the building, a banquet was held and speeches were made by Mr. Benneker, chairman of the Finance Committee of the Board of Legislation, Drs. Frank W. Hendley, N. P. Dandridge, and T. A. Reamy. Dr. A. B. Isham, of the board, acted as toastmaster.

PENNSYLVANIA.

New Board of Health for Norristown.—On May 21, a new Board of Health was appointed by the town council, to replace the members who left two weeks ago. The new board is as follows: Drs. Alfred H. Read, James Fennel, Joseph S. Rambo, James Wilkinson, and B. F. Whitby.

Smallpox is Rampant.—It is said that in the region of Newburg, to Roxbury and Edenville, and in Franklinville, in Franklin County, nearly 30 cases of smallpox have occurred within the past month. In one family 8 persons have been affected. A public funeral was held over the death of one of these persons and hundreds of persons attended. It is stated that some of these cases had been pronounced Spanish measles or Philippine itch. In Shippensburg, 8 cases have been reported. In Larksville, on May 24, 4 new cases were reported. The various lodges have been advised not to hold meetings during the existence of the malady.

Philadelphia.

Dr. Walter Wyman, Surgeon General, U. S. Marine-Hospital Service, was tendered a reception on May 23, by members of the Philadelphia Medical Club. Upwards of 150 guests were present.

Milk Investigation.—The Philadelphia Pediatric Society has again appointed a committee to examine into the condition of the milk sold in this city, to be composed of the following: Dr. C. J. Marshall, veterinary inspector; Dr. M. V. Ravenel, bacteriologist; and Dr. Henry Leffmann, chemist.

The Medico-Chirurgical College held its annual commencement at the Academy of Music on May 24, when 69 candidates received their degrees. A banquet was tendered the graduates on behalf of the Alumni Society on the evening of May 23. The class-day exercises were held in the clinical amphitheater on May 23, when ex-Governor Robert E. Pattison addressed the graduates.

Smallpox.—Since smallpox has been so widespread over the State of Pennsylvania and a portion of New Jersey the health authorities of this city are taking precautions to prevent it getting a firm foothold here. A joint letter from the boards of health of both Camden and Philadelphia was recently submitted to the board of health of Gloucester asking it to take the necessary steps to stamp out the disease.

Anniversary of Class of '76.—During the commencement week exercises of the University of Pennsylvania next month it is purposed to celebrate the 25th anniversary of the 1876 graduating class of the department of medicine with a dinner on June 11. At that meeting a permanent organization of the class for the benefit of its alma mater will be effected. The committee in charge consists of Drs. Charles A. Oliver, William H. Klapp and J. Francis Walsh.

Interneships.—On May 23 the Board of Charities and Corrections passed a resolution providing that the list of eligible applicants for positions as resident physicians of the Philadelphia Hospital (Blockley) be submitted to the authorities of the different medical colleges, namely: University of Pennsylvania, Jefferson Medical College, Medico-Chirurgical College, and the Woman's Medical College, and that the first three of these be permitted to name seven appointees each, and the last named three, subject to confirmation of the board.

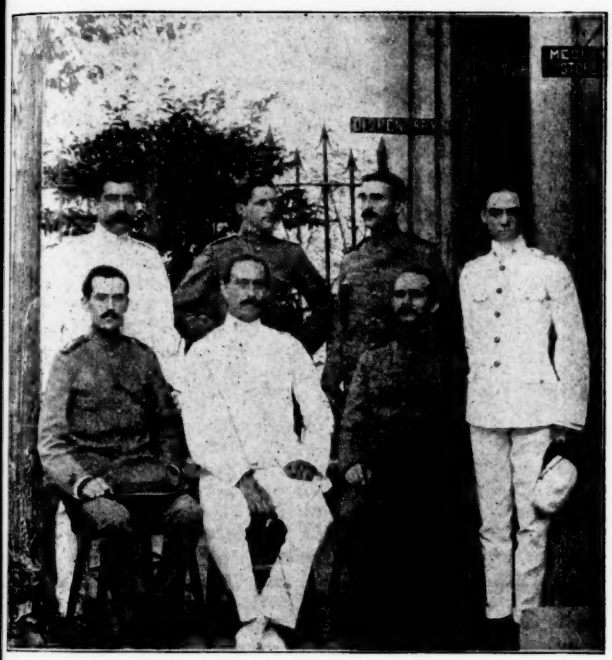
Epidemic of Typhoid Fever.—A mild epidemic of typhoid fever has been prevailing for several days in West Philadelphia north of Market street, and west of the Schuylkill river. The number of cases have gradually increased until its extent has become quite noticeable. Of the 102 cases reported in the city last week 40 per cent were said to have occurred in the Twenty-fourth and Thirty-fourth wards. This entire section of the city receives its water supply from George's Hill in Fairmount Park. The disease has for the most part been confined to the district north of Market Street, while few cases have been reported south of that street, a locality which derives its drinking water from the same source. It is now believed that the increase of typhoid may have been caused by polluted milk or defective sewage. Medical inspectors have made an investigation of the Belmont pumping station, but nothing has been found. For the week ending May 25, fifty-three new cases were reported in this district.

GENERAL.

Smallpox in Alaska.—There has been considerable excitement at Skaguay over the epidemic of smallpox in Southeastern Alaska. Quarantine has been declared against Sitka and other points and vaccination is going on everywhere in that country. Since January there have been over one hundred cases at Sitka.

Hospital Corps Company of Instruction, Hospital No. 3, Manila.—The third class of the Hospital Corps Company of Instruction of the Division of the Philippines, U. S. Army, held its graduating exercises March 27. The faculty of the

Company of Instructions consists of the following: Major John S. Kulp, U. S. A.; Captain Najeeb Saleeby, A. A. surgeon, U. S. A.; Capt. Jerome B. Thomas, A. A. Surgeon, U. S. A.; Lieutenant John C. Constable, 46th Infantry, U. S. V.; Lieutenant Clarence B. Millhoff, asst.-surgeon, U. S. A.; Lieutenant Walter D. Webb, asst.-surgeon, U. S. A., and Lieutenant William J. Lyster, asst-surgeon, U. S. A. Out of a class of fifty-one, nineteen passed the examination and received diplomas. Col. Charles C. Greenleaf, asst.-surgeon, U. S. A., Chief Surgeon Division of the Philippines, delivered the address to the class, and gave a brief history of the hospital corps. Lieut. Lyster, commanding the Corps of Instruction, gave a practical demonstration of what had been taught during the course, including first-aid, bandaging, application of temporary splints, improvised field hospital, ambulance work, surmounting of obstacles, travois, etc. The diplomas were presented to the class by Major-General Arthur MacArthur, U. S. A., Military Governor of the Philippines. Together with the report of the graduating exercises, Major Kulp has forwarded a schedule of instruction, which includes a fourteen-weeks' course of drills, dictation, spelling, arithmetic, hygiene, first-aid, minor surgery, elementary materia medica, nursing, elementary anatomy and physiology, pharmacy, clinical surgery, diet cooking, signal drills, the application of bandages and splints, and field work. The army is to be congratulated on the successful issue of the class of instruction. The continuance of such courses of study for the Hospital Corps would result in greatly increased efficiency of the corps and in incalculable good to the sick and wounded.



Capt. Saleeby. Lieut. Constable. Lieut. Lyster. Lieut. Webb.
Capt. Thomas. Maj. Kulp. Lieut. Millhoff.

Exhibit of the Medical Department, U. S. A., at the Pan-American Exposition.—A feature of the Exposition which will be of much interest to medical visitors is the exhibit of the Medical Department of the Army. As lack of floor space precluded an indoor display of sufficient scope to creditably represent the department, the exhibit has been confined to a 100-bed field hospital, equipped to take the field with an infantry brigade. This exhibit, in charge of Capt. E. L. Munson, assistant-surgeon, U. S. A., is centrally located immediately south of the Government Building, and visiting medical men are cordially invited to inspect its equipment and make it their headquarters on the Exposition grounds. The hospital is completely equipped down to the last tent peg and authorized ounce of supplies, and demonstrates the resources of the Medical Department, in respect to the brigade hospital unit, in quantity, size and capacity as well as in variety and quality. The exhibit is unique and particularly attractive by reason of the fact that the supply table of the Medical Department has been entirely revised within the past year, and scarcely an important article of equipment is shown which has not recently been adopted by the Medical Department. The exhibit thus represents the latest advances in every branch which has to do with the care of the sick and wounded in the field and the exhibit, as a whole, including tentage, camp furniture, instruments, dressings, medicines, hospital stores, cooking and messing facilities, represents a more modern and complete equipment than is possessed by any other army in the world. The transportation necessary to move the hospital with marching troops, together with its quota of ambulances—the latter of the new 1900 model—is also shown. Besides the equipment of the field hospital proper, the exhibit includes an enlisted personnel of twenty-four men of the Hospital Corps, U. S. Army, who act as attendants at the exhibit and also give an attractive series of exhibition exercises in litter drill, transportation of wounded, first-aid and bandaging, the method of establishing field hospitals, etc. The exhibit, while particularly valuable and instructive to medical officers of the National Guard, will prove of much interest to practitioners in civil life. Its completeness of equipment and excellence in respect to *personnel* reflect much credit upon the authorities of the Medical Department, and hence upon the profession at large, whose official representatives they are.

CANADA.

Unpaid Assessments.—Ontario physicians who have not responded to the demands of the Medical Council to pay all arrears of assessments have had their month of grace extended thirty days. After June 19 prosecutions will be commenced. Dr. Pyne, the registrar, states that all but 300 of the 2500 have paid up to date.

Financial Sympathy in Alleged Malpractice Suit.—Some time ago mention was made in these columns of a case of suit for malpractice against Dr. J. M. Conerty, of Smith's Falls, Ont. The statement has lately been circulating that Dr. Conerty had compromised for $600. This is incorrect. He is still fighting the case and with the approval of his fellow practitioners throughout the Dominion. The Montreal Medico-Chirurgical Society, the Toronto Clinical Society, Dr. R. W. Powell, of Ottawa, and others are supporting him with their financial sympathy.

Grave Robbing Case.—A third year student in medicine at Queen's University, Kingston, was arrested in February last having the dead body of a woman in his possession presumably for dissecting purposes. The case against him was disposed of on April 22 when the judge of the County Court of Peterboro had him discharged on the first count, the prosecution failing to prove that he had opened the grave. On the charge of indecently interfering with a dead body the defendant was find $200, or in default, one year in gaol. For this misdemeanor the Ontario law provides five years in the penitentiary or a fine at the judge's discretion. The student's previous good character saved him from gaol. This is the first case of its kind to come before the Ontario courts.

Winnipeg General Hospital.—The regular monthly meeting of the board of governors of the Winnipeg General Hospital took place in the hospital building on the afternoon of May 24, when the report of the special committee appointed to secure the services of a pathologist and bacteriologist, was received and adopted. The Committee reported that they had arranged with Dr. Gordon Bell of Winnipeg, the provincial bacteriologist, to assume charge of this work at the hospital at an annual salary of $500, he to appoint his own assistant, who was to be present at the hospital daily for such hours as might be found necessary for carrying on this work. Dr. Bell will assume his new duties on June 1. Dr. Chestnut, the medical superintendent, resigned and Dr. Jasper Halpenny, who has been acting as assistant medical superintendent for the past four months was promoted to the position of superintendent. His appointment will be for one year dating from June 1.

Ontario Vital Statistics.—The monthly report of the provincial board of health for the province of Ontario shows that there have been 2427 deaths in April as compared with 2525 in March, and 2311 in April of last year. The deaths from contagious diseases were as follows: consumption, 236; diphtheria, 39; scarlet fever, 17; whooping cough, 14; typhoid fever 12. The deaths from consumption and diphtheria show increase, the figures in April, 1900, being respectively, 203 and 24. It will thus be seen that the mortality from consumption as mentioned in THE JOURNAL'S editorial of May 25 is not by any means one-fifth of the deaths in the province of Ontario. One-tenth appears to be nearer the mark; and it is certain that several, if not all of the provinces, can produce as good, if not

better showing than this. The report as regards smallpox shows that there have been over 600 cases during the present outbreak, with only six deaths; this is a death-rate of one per cent. of those afflicted.

Public Works Health Regulations.—The Canadian Government has adopted a new set of regulations for the preservation of health and the mitigation of disease among persons employed in the construction of public works. Some few months ago an inspector was appointed to enforce the act respecting the employees on public works and these new regulations define his duties. He is to act as chairman when present at meetings of health boards, to notify the Minister of Agriculture and the secretaries of the provincial boards of health wherein public works are being carried on of all cases of infectious diseases. Any person or persons or companies constructing public works must engage a medical officer for each five hundred employees and such medical officer must be properly supplied with medicines and a means of conveyance. The health board upon such works is to consist of the inspector, the medical officers and the government engineer; and when there is no hospital within reasonable distance of the work the contractors must establish one. They must also provide temporary hospitals sufficient to accommodate at least six patients, or more if necessary, with a medical officer, nurses and proper hospital supplies. Suitable accommodation must also be provided for isolating infectious diseases. The regulations provide for fines for breaches of or non-observance of the rules.

Montreal General Hospital.—The annual meeting of the governors of this institution was recently held, and the committee of management has determined to put a stop to the annual deficits. After June 1, a charge of 10 cents is to be made for the first bottle of medicine in the out-door departments and thereafter 5 cents for each bottle. Dr. John McCrae has been appointed resident assistant pathologist and Dr. von Eberts, the medical superintendent, has had his term extended to May 1 next, his staff to consist of ten house-surgeons and a lady superintendent with seventy nurses. A complete new sterilizing apparatus has recently been put in at a cost of $500. Dr. Finley, the secretary, reported that the expenditure for the past year was $84,280; income, $75,994; indicating an excess of expenditure of $8286 for the year, which added to the deficiency of last year, $14,149, gives a total debit balance of $25,000 nearly. Dr. Finley also presented the report of the medical work for the year. There were 250 deaths, of which 105 occurred within three days of their admission. The death-rate had been 8.85 per cent., or, excluding the 105 cases dying within three days of their admission, 5.13 per cent. The average number of patients in the wards was 178, an increase of 11 as compared with the previous year. The average number of days in hospital per patient was 22.3; and the aggregate number of days in the hospital for all patients was 63,018, an increase of 2946 as compared with 1899-90. The average cost per patient per day had been $1.37, as against $1.35 in the preceding year. In the out-door department there were 41,606 consultations, being an increase of 4,233 over the previous year. Of these there were treated in the medical department, 12,431; surgical, 14,378; eye and ear, 6099; gynecologic, 1495; nose and throat, 3068; dermatologic, 1861; dental, 144; emergency, 2130.

FOREIGN.

Plague in Cape Town.—For the two weeks ending May 25, there occurred 56 cases and 33 deaths, making since the commencement a total of 666 cases and 308 deaths. The deaths include 55 Europeans. Judging by the returns, the disease seems to have reached its maximum and to be on the decline.

New Russian Medical Journal.—In the place of the Russian medical journal, *Vratch*, which suspends publication this year, the same publishers announce a new medical journal, *Russky Vratch*, to follow in the footprints of its predecessor. Professor Podwyssotski is to be the editor-in-chief. The new journal is to be dedicated to the memory of Manassein, the founder of the original *Vratch*.

Smallpox in Glasgow.—The epidemic of smallpox is rapidly dying out. On May 13 there were only 75 patients under treatment, and during the past fortnight there were only 28 fresh cases compared with 92 of the preceding. The total number of cases has now reached 1823, of which 232 were fatal. It is estimated that the extra expenditure of the city in connection with the epidemic will be $210,000 to $240,000. This is made up as follows: "Treating patients in hospital and isolating "contacts," $25,000 to $30,000; erecting temporary wooden pavilions and extending reception houses $35,000; preventive measures—including vaccination and revaccination—$150,000 to $175,000.

Plague in India.—For the week ending April 20 there were 6304 deaths from disease in all India, against 8429 of the previous week, again a considerable decrease. In Bombay there were 459 deaths—a decrease of 222, compared with the former week. A most satisfactory feature is that in the heart of Bombay there is for the first time for some months a considerable area from which the plague has disappeared. In Calcutta the present season's outbreak is nearing an end. Disinfection appears to have failed. Notwithstanding the extraordinary efforts during the intermission of the last year to thoroughly disinfect the slums of Calcutta the present recrudescence has been higher by about 50 per cent. than any previous one. Cases have repeatedly occurred in houses which have been disinfected repeatedly, so that little or no good appears to have resulted from the great expenditure on disinfectants. The effective disinfection of native houses seems impossible. At the end of March the weekly mortality rose to over 1100 in Calcutta, but in two weeks it had sunk to just one-half.

Plague in Sydney.—A fatal case has occurred at the quarantine ground. The patient was a man on board a troopship, which had just arrived from Cape Town, where it had been for two months. On the voyage a large number of rats died. The patient had been engaged in the hold of the ship assisting in removing the bodies of the rats. On arrival at Sidney the vessel was quarantined. Bacteriological examination showed that the rats were affected with plague bacilli. The ship was thoroughly fumigated and a large number of rats were killed. The period of quarantine—ten days— had just been completed and orders had been given for the release of the vessel when this man suddenly developed suspicious symptoms which proved to be plague. The board of health of Sydney is actively engaged in securing the cleanliness of every quarter of the city. Regulations have been framed that metal discs shall be fixed to ropes making vessels fast to wharves and that gangways shall be drawn up at night time so that rats shall be prevented from leaving ships. A penalty of $500 is attached to breach of these regulations.

Dr. John Cavafy.—Dr. John Cavafy, consulting physician to St. George's Hospital, died on the 28th ult. Though born in London, he was of Greek descent. He graduated at the University of London in 1867, and in the following year became a member of the Royal College of Physicians. He was appointed demonstrator of histology at St. George's Hospital, and showed great teaching abilities. He became in succession lecturer on comparative anatomy, medical registrar, lecturer on physiology, assistant physician, and physician and dermatologist. He was an excellent linguist and an artist of no mean capacity. His beautiful water-color drawings illustrating "Symmetrical Congestive Mottling of the Skin"—a condition described by him in the "Transactions of the Clinical Society"—adorn the museum of his hospital. He was not a voluminous writer, but something much better—one who wrote little but all of which was valuable. The following are a few of his most important papers: "Ameboid Movements in Leukemia," "Eruption after Salicylate of Soda," "Erysipelas with Low Temperature," "Urticaria Pigmentosa," "Sciatic Nerve-Stretching in Ataxia."

LONDON LETTER.

Thoracic Resonance in Left-Handed Persons.—At the Clinical Society, Sir Hugh Beevor exhibited two healthy left-handed adults to illustrate the normal thoracic resonance in left-handed persons. They proved that the lesser resonance in right-handed persons was due to greater muscular development on that side. He remarked that the absence of emphasis on this point in text-books leads to mistakes in diagnosis. In these cases the pulmonary resonance did not rise so high above the left clavicle as above the right.

Sir Frederick Treves.—Mr. Frederick Treves has had the honor of knighthood conferred upon him by the King in person, who also invested him with the insignia of a Knight Commander of the Royal Victorian Order. Recently he was appointed Honorary Sergeant-Surgeon to the King. He was awarded C.B. for his services as consulting surgeon in the South African War. But entirely apart from his services in the war, Mr. Treves has earned sufficient distinction as a surgeon and surgical writer to entitle him to the highest distinctions from his sovereign. His works on "Intestinal Obstruction," "Surgical Anatomy," "Operative Surgery," and the "System of Surgery" edited by him, have long been standard books in the profession.

Antivivisectionists Meet.—The annual meeting of the National Antivivisection Society has been largely attended and the gathering included some very influential people—peers, bishops and other church dignitaries. A well-known lawyer, one of the most prominent of the antivivisection controversialists, moved a resolution advocating the total abolition of vivisection as morally wrong. He said that vivisectionists did not defend the torturing of animals, but alleged that no tortures were inflicted. But such plausible assurances were, he insisted, false. The Archdeacon of Westminster described some laboratory experiments, when he was interrupted by a lady, who said: "Oh, we can't bear this!" to which he replied: "You have not to bear it. These poor animals have to bear it." The resolution was carried unanimously.

Laparotomy in Ascites.—At the Clinical Society Mr. Leonard Bidwell described three cases illustrating the value of this procedure. In the first the liver and omentum were stitched to the abdominal parietes after evacuating the fluid. The patient recovered and had no return of the ascites. She remained well for nearly six months, when she suddenly died from hematemesis, the result of alcoholic excess. In the second case a child, aged 9, had ascites, which had been preceded and was accompanied by albuminaria and abdominal pain. There was also general anasarca. He had been tapped ten times and the fluid reappeared very rapidly. He is now quite well but for a trace of albuminaria. In the third case, also of a child, aged 9, the ascites was due to cardiac disease, and there was general anasarca and enlarged liver. In this case, too, there was no return of the ascites and the child was able to get about, but died of syncope shortly after returning home.

Outbreak of Typhoid Fever Due to Fried Fish.—A report has been presented to the London County Council dealing with outbreaks of typhoid fever which occurred in September last in Southwark, Lambeth and Kensal Town. Great difficulty was at first experienced in tracing the disease to its origin, until one day light was thrown on the matter when the mother of one of the patients was questioned as to what food her boy was in the habit of taking, remarked: "The only thing he ever did eat in this house"—for her son did not live in the infected area but only visited it—"besides bread and butter was a bit of fried fish." This led to further inquiry, and it was found that most of those attacked had consumed this article of food, and, moreover, had obtained it from a particular shop. It was found that in Southwark, if this shop were taken as a center and a circle of a quarter of a mile radius drawn round it, practically the ground in which the exceptional incidence of typhoid fever occurred was covered, and the cases were more thickly distributed towards the center. Out of 10,500 persons eating fried fish from the shop, 101 became infected, while there were only 11 cases in 14,500 persons not dealing at the shop. Again, in the adjacent district of Lambeth, where there were some 45 cases, only one occurred in which fried fish from a suspected source was not eaten. How the fried fish became a source of contagion has not been ascertained.

Paracentesis of the Pericardium.—At the Liverpool Medical Institution, Dr. Glynn described the following case: A boy aged 17 had pleuropneumonia eighteen weeks before admission to hospital, from which he never recovered. During the illness clear fluid was aspirated from the left side. On admission there was dyspnea, the respirations being 30 when he was propped up in bed. The pulse was 120, soft and irregular. There was periodical dullness 2½ inches to the right and 5 inches to the left of the middle line at the level of the nipple, and lower reaching the axillary line. The apex beat was absent, and the heart sounds were feeble. The temperature was normal. At the end of a fortnight the pericardium was aspirated and 14 ounces of clear fluid were removed. The urgent symptoms were relieved, the apex beat became perceptible, and pericardial friction sounds were audible for the first time. In a month the fluid reaccumulated and 23 ounces were removed. A mercurial manometer was used on this occasion to estimate the pressure of the fluid in the pericardium by means of a T tube behind the aspirating needle. At the commencement of aspiration the pressure was +2.1 cm.; at the end —2 cm. No organism was discovered in the fluid. The pericardial friction sounds again returned, but they disappeared in a week or two, and there was no evidence of recurrence of effusion. The patient left hospital apparently well at the end of March. It has just been reported that the effusion has returned.

The Registration of Midwives.—Last year a bill for the registration of midwives passed its second reading in the House of Commons by a large majority and went almost unaltered through the standing committee on law. It provided that all women who attend cases of natural labor for gain should undergo a course of training in midwifery, pass an examination and be placed on an official register. The value of such a measure is obvious. The majority of the women of the country either can not afford to pay for the services of a medical man or for other reasons are attended by midwives, most of whom are untrained and ignorant. England stands almost alone among the countries of Europe in allowing any woman, however competent, to practice midwifery. The Registrar-General's report shows an annual death rate of women in childbirth in England and Wales of between 3000 and 4000. Puerperal fever is responsible for between 2000 and 3000 of these deaths. When a midwife coming from a case of puerperal fever is warned both by the doctor and by the coroner, there is power to prevent her attending another confinement. Again and again a midwife has been proved to leave a train of deaths behind her. Further, unskilled aid during the puerperal period is responsible for the blindness which results from ophthalmia neonatorum. The bill for the registration of midwives was warmly supported by the leading obstetricians of the country, other eminent medical men and by the coroners. Unfortunately it received considerable opposition from the rank and file of the profession. The cry was raised that an inferior and imperfectly trained order of medical practitioners was being created whose recognition would be fraught with danger to the puerperal woman, who requires and should receive the highest skill, and not knowledge which could be acquired in a few months' training in a lying-in hospital.

The Late Sir B. W. Richardson, F.R.S.—A remarkable work entitled "Disciples of Æsculapius," by the late Sir B. W. Richardson, with a life of the author, by his daughter, has just been issued. The author was perhaps the most distinguished medical advocate of total abstinence. He was a very voluminous writer, and, like Mr. Jonathan Hutchinson, published a quarterly medical journal entirely written by himself. But the value of his work lies in its scholarship and literary qualities rather than in any scientific observations made by him. In the present work his daughter touchingly describes his last hours in an episode which recalls those of the venerable Bede: "Take your pen, please; I will add another chapter to 'Vita Medica'"—his last book. "Head the page 'A Last Word.'" He then dictated a few lines. "Yes, Sir Benjamin, that is all—the book is finished." So it was, and so was the life of the author. Two hours later he was seized with apoplexy, from which he died after two days of unconsciousness. The life of the immortal Harvey is briefly sketched. A most interesting account is given of the life of Keats. The idea suggested by Byron that he was "snuffed out" by an article in *Blackwood* or the *Quarterly Review* is declared to be simply nonsense. His death was due to consumption, and perhaps expedited by his own imprudence. The life of Walsley, the courageous founder of the *Lancet*, is full of interest. Among the many reforms due to him was the abolition of flogging in the army. He was coroner for Middlesex, and succeeded in obtaining a verdict of murder in the case of a soldier who had been whipped to death. This made the repetition of such a crime impossible. Another medical reformer, Benjamin Rush, is described as the "American Sydenham." "He was amongst the first to oppose the committal of murder by the state for the purpose of setting an example to individuals not to murder."

Correspondence.

Individual Rights and the County Medical Society.

SPOKANE, WASH, May 17, 1901.

To the Editor:—When a medical man or woman is a graduate of a reputable medical college, and has complied with the laws of his state, regulating the practice of medicine, and is apparently eligible in every way for membership in a county society, if for a trivial reason he is denied admission to his county society, an injury is done that is far reaching in its consequence, both to him, to the local society, to the state society and to the AMERICAN MEDICAL ASSOCIATION, and it tends to foster and keep alive a general opinion that county societies, as well as the state and national, are conducted for the benefit of the few, and that in place of these organizations

being scientific primarily, they have degenerated into social and mutual admiration societies.

By denying a person admission into the county society, one is denied admission into the state and national association. This state of affairs could hardly have been intended when the laws of these organizations were first instituted. I suspect the very respectable minority of the profession, if not a majority, would welcome some plan by which this condition could be altered, and by so doing have many energetic and capable medical men inside of these organizations, and thereby help to relieve the demoralized state into which the profession has fallen in many sections of the country.

It should not be possible for a county society to cast an unalterable stigma on a member of the profession, while at the same time he has no means of defending himself. Our general law convicts no one without a fair trial by jury, and the applicant for membership in a county society should have the same privilege.

I have no ax to grind in bringing this subject forward, as I am a member in good standing in both my county and state societies, and am eligible to membership in the AMERICAN MEDICAL ASSOCIATION. One the contrary, I believe I am acting for the good of the whole profession in making an effort to have our societies placed on a solid and equitable foundation.

I have been steadily engaged in practice for over thirty-one years and have always taken an interest in medical society work. In the natural course of events, I will, in a few years, step down and out, and if I can in a small way help to start a movement that will be of benefit to the profession in general, I will feel amply repaid.

The remedy I would suggest—the national association at its meeting soon to take place, could profitably take up this subject, and by discussion secure a general opinion—is for the AMERICAN MEDICAL ASSOCIATION to require each state and county society to be chartered, then provide that an applicant shall have the right of appeal to the state and national societies in case of rejection. There is no doubt but there are many among the ablest in the profession, who are outside of medical organizations, and who claim that they have been deprived of a right, and without their side being allowed a hearing.

H. G. MAUZEY, M.D.

Antiseptic Treatment of Smallpox.

HOUSTON, TEXAS, May 21, 1901.

To the Editor:—THE JOURNAL of May 11 contains a communication from Dr. A. Bryan, Detroit, Mich., in which he claims to be "the original author of what may aptly be termed the antiseptic treatment of the disease (smallpox)." The date of the publication of this theory and practice in regard to smallpox is given as 1895. This theory and practice may have been original with Dr. Bryan, but in March, 1894, this same treatment and theory was thoroughly presented in the *Texas Sanitarian*, as originating with Dr. T. C. Osborne, of Cleburne, Texas. Dr. Osborne, however, was not the first physician to publish this theory. In August, 1896, I had the pleasure of receiving from Dr. J. Kornitzer, of Socorro, N. M., a pamphlet published by him in February, 1880, at Cincinnati, Ohio, in which he set forth the same views as Dr. Osborne, and that were, later, set forth by Dr. Bryan.

The *Texas Sanitarian* is now the *Texas Medical News*, so if Dr. Bryan cares to look into the subject further he can obtain the desired information from the aforementioned journal of Austin, Texas. Very truly,

S. C. RED, M.D.

[Several other communications have also been received relative to this matter, the others giving personal experience with no references.—ED.]

A Suggestion to Preparatory Schools Regarding Morality from the Common-sense Standpoint.

NEW HAVEN, CONN., May 23, 1901.

To the Editor:—The prevention of venereal diseases is an important subject. Legalized prostitution has its advantages and disadvantages, but the teaching our young men the results of common venereal disorders, has never been attempted in the curriculum of our preparatory schools. If an obligatory course of lectures on the common complications of gonorrhea, chancroid, and syphilis were to be given in our large schools where young men are prepared for the universities, it seems as if it might have much weight.

The lectures should be given by a physician of experience and should cover the common dangers incident to the disorders, viz.: etiology, symptoms, complications, and sequels. If these lectures were delivered to the graduating class of the preparatory schools, it might have a good effect on the future actions of its members.

The lectures should not be intended to intimidate men, but simply to present morality from its common-sense standpoint, if nothing more.

To-day men are more enlightened than ever. Why not break down the so-called false modesty and educate our young fellows in the real dangers, as well as enlargement of their muscles. Men at college are influenced easily as a rule, if matters are set clearly before them, and if they knew beforehand, in most cases they would not make these mistakes.

G. TOTTEN-MCMASTER, M.D.

Anesthetization During Sleep.

NASHVILLE TENN., May 20, 1901.

To the Editor:—If the anesthetization of children during sleep is of medicolegal interest I can add one case to the three reported by Dr. Paugh in THE JOURNAL of May 18. A boy of 18 or 20 months was brought to the clinic of Dr. J. A. Bodine, of the New York Polyclinic for circumcision. The child was found to be asleep in the mother's arms and the gradual administration of chloroform was begun without disturbing its slumbers. Complete surgical anesthesia was finally produced without any sign of irritation or symptom of awakening. Recovery from anesthesia was rapid, the child being in much better humor for having been spared the fright and shock of forced anesthesia. The procedure is uncommon, but by no means impossible or even difficult of achievement.

W. C. WELBURN, M.D.

Memphis in 1902.

The Memphis Medical Society has, after thoroughly convassing the situation through proper committees, unanimously voted to invite the AMERICAN MEDICAL ASSOCIATION to meet in Memphis, Tenn., at its regular annual meeting in 1902. The Cotton Exchange, Business Men's Club, Passenger Association and all commercial interests in the city are anxious to have Memphis selected as the next meeting-place. Memphis, while her hotel capacity is not as large as it might be, compares favorably with any other city of her size. The hotel capacity is approximately 1500, without crowding, and there are definite promises to care for 1560 comfortably, 2200 by crowding, and 3225 by auxiliary resources, namely respectable boarding-houses. The auxiliary resources will cover only rooms in easy reach of the hotels and cafes. Aside from the hotels Memphis offers her homes. Meeting-places for the different Sections, and banquet halls, etc., have been fully planned for

W. BRITT BURNS.

Saratoga Springs in 1902.

In selecting a place for the next meeting of the ASSOCIATION, an effort should be made to find a place than can accommodate all possible delegates, friends and business people interested, and that too without crowding or making it necessary to engage accommodations two or three months in advance. Among the places that will extend an invitation to the ASSOCIATION for its next annual meeting will be Saratoga Springs, N. Y. In extending this invitation Saratoga Springs can and will guarantee, practically unlimited, thoroughly first-class accommodations at prices which will suit every purse. Its summer hotels are the largest in the world, and any or all of them will be open to the accommodation of the ASSOCIATION. Two of its largest hotels will accommodate about three thousand guests, two others about two thousand, and four or five smaller ones from three hundred to five hundred each, and all of these, including the convention hall, within a distance of each other of four city blocks, and this estimate is based on the actual num-

ber which are accommodated in ordinary times at the season's height. In addition to these, it boasts of a number of smaller hotels and many private boarding-houses. Saratoga can accommodate easily twenty thousand guests. The citizens have lately built a convention hall especially designed for the use of conventions. This hall will seat comfortably five thousand persons. Abundant facilities for the meeting of the different branches can be furnished. In addition to its superior and unusual accommodations as a convention town, Saratoga Springs is the health resort of the continent. It lies to the eastern spur of the Adirondacks and its climate is remarkably healthful. Saratoga is a village of unusually beautiful drives; its streets are well paved and delightfully shaded; so abundant is the shade that the village seems planted in the forest. Then we have Saratoga Lake, one of the most beautiful bodies of water to be found in the Adirondacks. This lake is easily accessible by trolley and by one of the most beautiful drives to be found anywhere in the world. Saratoga Springs and vicinity teem with historic interest. Only a few miles away the battles of Saratoga were fought, while a short distance to the north lie the beautiful and historic lakes George and Champlain. The village abounds in beautiful parks and elegant private grounds which are open to the public for drives. D. C. MORIARTA.

511 Broadway, Saratoga Springs.

Association News.

General Executive Committee.

The first meeting of the General Executive Committee of the AMERICAN MEDICAL ASSOCIATION will be held in Parlors 2 and 3, Hotel Ryan, St. Paul, Minn., on Monday, June 3, 1901, at 5 p. m. A full attendance is requested, in order that the committee may get to work early, and be ready for business referred to it by the ASSOCIATION. Subsequent daily meetings will be held in the same place, and about the same hour daily, unless otherwise ordered by the committee. L. DUNCAN BULKLEY, M.D., secretary.

Kentucky State Medical Society.

At the annual meeting of this Society, held in Louisville, May 22, 23 and 24, Dr. J. N. McCormack outlined the salient features of the report of the Committee on Reorganization of the American Medical Association, after which a resolution was introduced and adopted unanimously, urging the delegates of the Kentucky State Medical Society to go to St. Paul and do all in their power towards the adoption of the report after its presentation.

Illinois State Medical Society.

A motion was made and carried at the recent meeting of this Society, endorsing the report of the Committee on Reorganization of the American Medical Association, and the retiring president, Dr. George N. Kreider, was instructed to convey such information to the American Medical Association at St. Paul. A committee of five was also appointed to consider the revision of the Constitution and By-Laws of the Illinois State Medical Society, in conformity with what will be adopted at the American Medical Association meeting, and to report at the next annual meeting.

Resolution of Nebraska State Medical Society.

Resolved, That this Society hereby endorses the plan of the Committee of the American Medical Association of a thorough reorganization of the American Medical Association and all affiliating societies, and all delegates of the Nebraska State Medical Society in attendance of the annual meeting of the American Medical Association at St. Paul are hereby instructed to use all diligent efforts for the accomplishment of this object, and all permanent members are respectfully solicited to do likewise.

The Excursion to Yellowstone Park.

The General Manager of the Northern Pacific asks us to announce that those who have made reservations must deposit $13 per berth, or $26 per section, at the St. Paul ticket office on or before 6 o'clock p. m. Wednesday, June 5. It is necessary for those who are making the arrangements to know approximately how many will go two days before the time of starting so that ample equipment can be furnished and the necessary preparations made. Hence all who propose to go on this trip should secure their reservations as soon after their arrival in St. Paul as is practicable.

Report of the Committee on Transportation.

The Committee on Transportation reports that since its announcement last week, it has been able to secure in the New England Passenger Association an extension of time limit to July 15, for the St. Paul meeting provided the return tickets are deposited with the joint agent not earlier than May 29, nor later than June 15, together with the payment of 50 cents extension fee. The Southeastern Passenger Association has granted the same time limit extension under the same conditions, but has failed to this date to announce a rate. The rate will probably be one and a third, but your Committee is endeavoring to secure the one fare plus $2 rate out of that territory. Your committee is particularly pleased that it has been able, at last, to secure a uniform time limit extension to July 15, under the usual regulations, in all of the railroad associations on the occasion of the various St. Paul meetings. The Western and Central Associations have granted us a one fare plus $2 rate for the round trip, and the Trunk Lines and New England roads have granted a one fare and one third certificate plan. The Southeastern Passenger Association rate has not been decided upon finally, but your committee will secure the lowest possible rate, which of course, will not be obtained in time for publication in THE JOURNAL prior to the St. Paul meeting. Delegates residing in this territory will learn the rate from their local ticket agents, and are advised to apply early for their rates and certificates. The same advice in the matter of certificates is hereby given to delegates residing in the Trunk Lines and the New England Territories. Delegates from any of the territories who desire to avail themselves of the stop-off privilege at Milwaukee on returning, are hereby informed that the only road of the Western Passenger Association territory granting this privilege at the request of your committee, and in the best interest of the physicians at large, is the Chicago, Milwaukee and St. Paul Railroad Company. This road in conjunction with the Pennsylvania and its connecting lines out of the East, in consequence of the better facilities offered, and their hearty co-operation with your Committee in the interest of the medical delegates, has been decided upon as the official route to and from the meeting at St. Paul. Your Committee, though human, has declined all personal courtesies offered by several competing roads, and have had, in advising you, but one object in view, our duty and your interests.—H. L. E. JOHNSON, Chairman.

Deaths and Obituaries.

Thomas F. Rumbold, M.D., Jefferson Medical College, Philadelphia, 1862, one of the pioneers in rhinology in the United States, noted for his work in this department, and for his contributions to its literature, a member of the AMERICAN MEDICAL ASSOCIATION, died at his home in St. Louis, May 23, aged 71. The St. Louis Medical Society held a special meeting May 24, to take action on the death of Dr. Rumbold.

Whitcomb Eliphalet Pratt, M.D., College of Physicians and Surgeons, Baltimore, Md., 1885, a widely known and popular physician of Buckingham Court House, Va., and a member of the Virginia State Medical Society and the AMERICAN MEDICAL ASSOCIATION, died from valvular heart disease, after a long illness, at Richmond, Va., May 16, aged 51.

Alexander Stewart, M.D., College of Medicine of Queen's University and Royal College of Physicians and Surgeons, Kingston, Ont., 1889, state examiner for the Modern Woodmen of America and well-known for his professional ability throughout the state, died suddenly at his home in St. Thomas, N. Dak., May 19, from heart disease.

Frederick L. Nutt, M.D., Chicago Medical College, 1878, a prominent and successful physician of McHenry County and a member of the AMERICAN MEDICAL ASSOCIATION, at his home in Marengo, Ill., May 23, from pneumonia, after an illness of two weeks, aged 49.

Paul R. Moore, M.D., New York University, 1859, who retired from practice a number of years ago, and has since resided in Los Angeles, Cal., died at the residence of his son, Dr. Thomas B. Moore, Butte, Mont., May 13, from pneumonia, aged 65 years.

Cyrus D. Morrill, M.D., New York University, 1859, one of the oldest practitioners of Madison, Me., formerly superintendent of schools and representative in the state legislature, died at his home in Madison, May 15, aged 70.

Thomas Alexander Means, M.D., Atlanta Medical College, 1856, a well-known physician of Alabama, and a surgeon in the Confederate service throughout the civil war, died at his home in Montgomery, May 14, aged 69.

George W. Pembroke, M.D., University of Maryland, Baltimore, 1868, died at Friendship, Anne Arundel County, Maryland, May 12, from the effects of a carbuncle on the neck.

Dalton Trumbauer, M.D., Jefferson Medical College, Philadelphia, 1892, died from consumption, May 15, after a long illness, at his home in Coopersburg, Pa., aged 32.

Jacob Derickson, M.D., University of Pennsylvania, Philadelphia, a retired physician of Wilmington, Del., died at his home in that city, May 16, aged about 70.

Robert O'Brien Durrett, M.D., University of Louisville, Ky., 1851, died at his home, Newstead, Jefferson County, Ky., May 12, from paralysis, aged 73.

Conrad Wienges, M.D., College of Physicians and Surgeons, N. Y., died from multiple neuritis at his home in Jersey City, May 23, aged about 53.

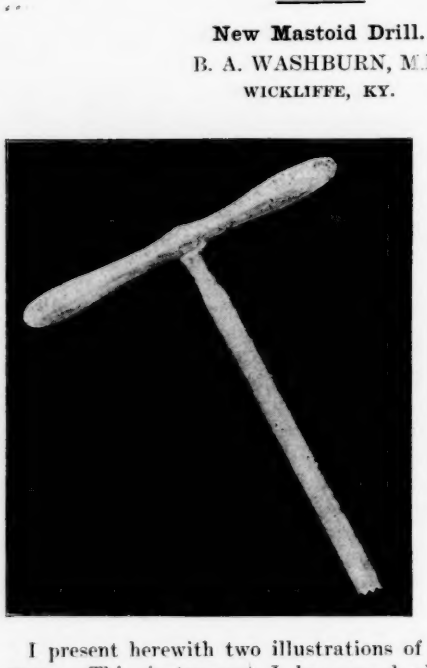
George W. Scott, M.D., Medical College of Virginia, Richmond, 1894, died from pneumonia at his home near Madison Run, Va., May 14, aged 28.

John Adams Wells, M.D., College of Physicians and Surgeons, New York, 1879, died at his home in Englewood, N. J., May 21, from pneumonia.

New Instruments.

New Mastoid Drill.

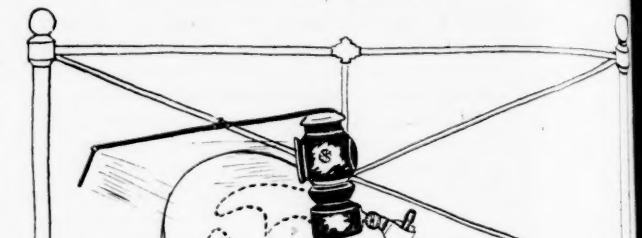
B. A. WASHBURN, M.D.
WICKLIFFE, KY.



End view of cutting surface.

I present herewith two illustrations of my mastoid drill or gouge. This instrument I have used almost exclusively in place of the regular gouges for mastoid work, and as it has proven very practical, it may be of interest to other members of the profession.

A New Device,



Consisting of the combination of a bicycle lantern, mirror and bar, and a walking-stick, for illumination of the rectum at the bed-side. Thos. Chas. Martin, M.D., Cleveland.

Miscellany.

Value of Vaccination.—Inspector Spalding, of Chicago, states that between Nov. 30, 1900, and May 8, 214 cases of smallpox were reported, of which 182 were of persons who never had been vaccinated, 21 had imperfect, doubtful marks, very old; 7 had fair but old marks, and 4 only had typical old marks.

Primary Echinococcus of the Pleura Cured with Sublimate.—J. Bokay describes in *Orvosi Hetilap*, 1900, 17, a case of primary echinococcus of the pleura in a boy of 5. Evidences of the parasite were discovered in the fluid obtained by an exploratory puncture and Bacelli's method of treatment was followed. After withdrawal of the fluid through a puncture between the fourth and fifth ribs, 20 c.c. of a filtered 1 per 1000 solution of sublimate was injected. The temperature rose to 39.2 C.for five days, but the symptoms gradually improved. A second injection like the first, a month later, was followed by the rapid disappearance of all symptoms and the patient was dismissed cured with a gain of three kilograms in weight.

Bier's Improved Method of Spinal Cocainization.—The improved technique which Bier has heralded and which he presented at the German Congress of Surgery, April 11, is a combination of subarachnoid injection of cocain and an elastic ligature around the neck to restrict the action of the cocain to the spine and keep it out of the brain. According to the report in the *Semaine Méd.* of April 17, he injects a much weaker solution of the cocain than is generally used at present, and aspirates a corresponding amount of cerebrospinal fluid to make room for it. An elastic band is fastened around the neck sufficiently tight to induce slight cyanosis without much discomfort. By this combination he has been able to reduce to a remarkable extent the unpleasant consequences of medullary analgesia as the increased intracranial pressure interposes an obstacle to the diffusion in the cocain. Further researches in this line, he added, will result in the evolution of a perfected technique of spinal cocainization free from all danger. Constriction of the neck to induce hyperemia of the brain has been utilized recently by Bier as a therapeutic measure, as described in THE JOURNAL of January 12, p. 144.

Societies.

COMING MEETINGS.

American Medical Association, St. Paul, Minn., June 4-7.
Association of Military Surgeons of the United States, St. Paul, May 30, 31, June 1, 1901.
American Academy of Medicine, St. Paul, Minn., June 1-3.
National Con. State Medical Examiners and Licensing Boards, St. Paul, Minn., June 3.
Association of American Medical Colleges, St. Paul, June 3.
American Medical Editors' Association, St. Paul, June 3.
Minnesota State Medical Society, St. Paul, June 3.
Indian Territory Medical Association, Vinita, June 4-5.
American Proctological Association, St. Paul, Minn., June 4-5.
American Dermatological Association, Chicago, June 4-6.
Rhode Island Medical Society, Providence, June 6.
South Dakota State Medical Society, Huron, June 10-11.
International Association of Railway Surgeons, Milwaukee, June 10-12.
Medical Society of Delaware, Lewes, June 11.
Oregon State Medical Society, Portland, June 11-12.
American Medico-Psychological Association, Milwaukee, Wis., June 11-14.
Maine Medical Association, Portland, June 12-14.
Massachusetts Medical Society, Boston, June 12.
Colorado State Medical Society, Denver, June 18.
American Orthopedic Association, Niagara Falls, June 11-13.
Medical Society of New Jersey, Allenhurst, June 25-27.
Wisconsin State Medical Society, Waukesha, June 26.
Medical Association of Nevada, Reno, July 1.
American Ophthalmological Society, New London, Conn., July 17.

Indian Territory Medical Association.—This association will hold its annual meeting at Vinita, June 4 and 5.

Schuylkill County (Pa.) Medical Society.—At the meeting of this society, May 7, delegates were appointed to the AMERICAN MEDICAL ASSOCIATION.

La Salle County (Ill.) Medical Society.—At the annual meeting of this society, in Ottawa, April 30, Dr. William H. Fraser, La Salle, was elected president.

American Association of Life Insurance Examining Surgeons.—The next session of this Association will be on June 3, in St. Paul, Minn., in the Masonic Hall.

Buffalo Academy of Medicine, Medical Section.—At the recent meeting of the section Dr. Julius Ullman was elected chairman and Dr. Albert E. Woehnert secretary.

South Dakota Medical Society.—The twentieth annual meeting of this society will be held in Huron, June 10 and 11, under the presidency of Dr. C. M. Keeling, Springfield.

Medical Society of the State of Washington.—This society will hold its annual meeting, in Seattle, June 18, 19 and 20, under the presidency of Dr. Park Weed Willis, of that city.

State Medical Society of Wisconsin.—The fifty-fifth annual meeting of this society will be held in Waukesha, June 26, 27 and 28, under the presidency of Dr. John F. Pritchard, Manitowoc.

Medical Society of New Jersey.—The annual meeting of this society, which was organized in 1766, will be held at Allenhurst, June 25, 26 and 27, under the directorship of Dr. John D. McGill, Jersey City.

Bristol County (Mass.) Medical Society.—At the annual meeting of this society, at Fall River, Dr. Milton H. Leonard, New Bedford, was elected president, and Dr. John W. Coughlin, Fall River, vice-president.

Union District Medical Society.—The annual meeting of this society was held in Rushville, Ind., April 25. Dr. Mark Millikin, Hamilton, Ohio, was elected president, and Dr. Everett R. Beard, Liberty, secretary.

Muscatine (Iowa) Medical Society.—At the annual meeting of the society, held May 2, Dr. Henry M. Dean was elected president, Dr. Calvin W. Smith vice-president, and Dr. John L. Klein secretary and treasurer.

Washington City (Iowa) Medical Society.—This society was organized April 26, with the following officers: Dr. Edmund R. Jenkins, president; Dr. J. C. Boice, vice-president, and Dr. George W. Hay, secretary and treasurer.

Albert Lea District Medical Society.—The second annual session of the society was held at Albert Lea, Minn., May 21. Drs. Albert C. Wedge and Hamilton H. Wilcox were re-elected president and secretary respectively.

Spartanburg County (S. C.) Medical Society.—This society was reorganized May 15, and elected Dr. Hugh R. Black president, Dr. Lewis J. Blake vice-president, Dr. G. De Foix Wilson secretary, and Dr. George R. Dean treasurer.

Alumni Association of Cincinnati College of Medicine and Surgery.—At the annual meeting of this association, May 1, Dr. William Roush, Spencerville, Ohio, was elected president, and Dr. Edward S. Johnston, Cincinnati, secretary and treasurer.

Charleston (W. Va.) Medical Association.—This association, which was recently organized, has elected Dr. Alfred S. Patrick president; Dr. William W. Tompkins, vice-president; Dr. Timothy L. Barber, secretary, and Dr. John L. Stump, treasurer.

Albert Lea District (Minn.) Medical Society.—This Society, at its annual meeting elected the following delegates to the Association: Drs. Berthold M. J. Conlin, Owatonna; Peter H. Vesterborg, Forest City, Iowa; and Hamilton H. Wilcox, Albert Lea.

Fort Dodge (Iowa) Medical Society.—At the meeting of this society, May 9, Dr. Alanson M. Pond, Webster City, was elected president; Dr. Thomas F. Grayson, vice-president; Dr. Harley G. Ristine, treasurer, and Dr. W. R. Bates, secretary, all of Fort Dodge.

Savannah (Ga.) Academy of Medicine.—This society has effected permanent organization, with the following officers: Dr. Arthur A. Morrison, president; Dr. Frederick Wahl, vice-president; Dr. J. Oliver Cook, secretary, and Dr. George L. Harman, treasurer.

La Porte (Ind.) Medical Society.—At the annual meeting of this society, at La Porte, April 30, delegates to the AMERICAN MEDICAL ASSOCIATION were appointed; Dr. Horace Wardner was reëlected president, and Dr. Eber L. Annis reëlected secretary, both of La Porte.

Franklin County (Vt.) Medical Society.—At the annual meeting of the society, held at St. Alban's Hospital, May 9, Dr. E. Merriman Brown, Sheldon, was elected president; Dr. William R. Prime, Burlington, vice-president, and Dr. James N. Jenne, St. Albans, secretary.

Dorchester County (S. C.) Medical Association.—The physicians of Dorchester County met at St. Georges, May 15, to organize a county medical association, and elected Dr. P. L. Horn temporary chairman and Dr. John B. Johnston temporary secretary, both of St. Georges.

Aesculapian Medical Society of the Wabash Valley.—The annual meeting of this society was held at Mattoon, May 16. Dr. John A. Baughman, Neoga, was elected president; Dr. Francis D. Lydick, Paris, vice-president, and Dr. Harry McKennan, Paris, secretary and treasurer.

Center County (Pa.) Medical Society.—This society held its regular monthly meeting on May 14, at Bellefonte, and elected the following delegates to represent it at the meeting of the AMERICAN MEDICAL ASSOCIATION in St. Paul: Drs. S. M. Huff, J. Y. Dale, and H. S. Braucht.

Clay County (Mo.) Medical Society.—At the annual meeting of this society, held at Liberty, April 29, Dr. Leander J. Jones was elected president; Dr. John J. Rice, Kearney, vice-president; Dr .F. H. Matthews, Liberty, secretary, and Dr. John H. Rothwell, Liberty, treasurer.

Franklin District (Mass.) Medical Society.—At the annual meeting of this society, held in Greenfield, May 14, Dr. Halbert G. Stetson, Greenfield, was elected president; Dr. Francis J. Canedy, Shelburne Falls, vice-president, and Dr. Benjamin P. Croft, Greenfield, secretary and treasurer.

Middlesex East District (Mass.) Medical Society.—At the meeting of this society held May 9, in Woburn, Dr. Charles E. Chase, Woburn, was elected president; Dr. Joseph W. Heath, Wakefield, vice-president; Dr. Ernest S. Jack, Melrose, secretary, and Dr. Charles Dutton, Wakefield, treasurer.

Fifth District Branch of the New York State Medical Association.—The newly elected officers of the association are: Dr. Emil Mayer, New York, president; Dr. Mary Gage-Day, Kingston, vice-president; Dr. Edmund L. Cocks, New York, secretary, and Dr. Edward H. Squibb, Brooklyn, treasurer.

Colorado State Medical Society.—The coming meeting of this Society at Denver, June 18, 19 and 20, promises to be of unusual interest. A special feature of the first day's program is a report on the history of medicine in Colorado, and on the second a symposium on diseases of the kidney will be held.

Connecticut River Valley Medical Association.—The annual meeting of this Association was held at Bellows Falls, Vt., May 7. Dr. James A. Craig, Westmoreland, N. H., was elected president; Dr. J. Suteliffe Hill, Bellows Falls, Vt., vice-president, and Dr. Edward R. Campbell, Bellows Falls, Vt., treasurer.

Clinical Society of the District of Columbia.—This society gave its annual banquet May 28. An elaborate program was prepared by the committee, of which Dr. Wilfred M. Barton is chairman, and Drs. Wells, James, Ramsburgh and De Vries the other members. The society then adjourned for the summer.

Union County (Ky.) Medical Society.—The annual meeting of this Society was held in Morganfield, May 6. The following officers were elected: Dr. Vaudois E. Handley, Sturgis, president; Drs. R. L. Martin, Bordley, and I. D. Winston, Sturgis, vice-presidents, and Dr. Wiley L. Dixon, Morganfield, secretary and treasurer.

Essex North District (Mass.) Medical Society.—The annual meeting of this Society was held in Lawrence, May 1. Dr. Frank B. Flanders, Lawrence, was elected president; Dr. John F. Croston, Haverhill, vice-president, Dr. Maurice D. Clarke, Haverhill, secretary and treasurer, and Dr. Alphonso B. Brown, Newburyport, corresponding secretary.

Washington County (Pa.) Medical Society.—The annual meeting of this Society was held in Washington, May 14, when the following officers were elected: Dr. William R. Thompson, Washington, president; Dr. George A. Linn, Monongahela, vice-president; Dr. John A. McKean, Washington, secretary, and Dr. Albert E. Thompson, Washington, treasurer.

New Hampshire Medical Society.—The one-hundred and tenth annual meeting of this Society was held in Concord, May 16 and 17. The following officers were elected: Dr. Daniel S. Adams, Manchester, president; Dr. Irving A. Watson, Concord, vice-president; Dr. Marcellus H. Felt, Hillsboro Bridge, treasurer, and Dr. Granville P. Conn, Concord, secretary.

Ex-Internes' Association of Good Samaritan Hospital, Cincinnati.—At the third annual reunion and banquet of this Society the following officers were elected: Dr. Frank Brunning, president; Drs. Jephtha D. Davis, Frank L. Ratterman and Dudley Webb, vice-presidents; Dr. Robin W. C. Francis, secretary and Dr. John P. Miller, treasurer, all of Cincinnati.

Hampshire District (Mass.) Medical Society.—This Society convened for its annual session at the Northampton Insane Hospital, May 10, elected delegates to the AMERICAN MEDICAL ASSOCIATION and the following officers: Dr. John A. Houston, president; Dr. Clarence R. Gardner, vice-president, and Dr. Arthur G. Minshall, secretary, all of Northamptom.

Buffalo Anti-Tuberculosis Society.—The name of the Erie County Society for the Prevention of Tuberculosis has been changed to the Buffalo Anti-Tuberculosis Society. An exhibit will be shown at the Pan-American Exposition, and among other things a stained preparation of a tubercle bacillus found in the expectoration on the floor of a street-car will be shown.

Worcester District (Mass.) Medical Society.—The annual meeting of this Society was held at Worcester, May 8. Dr. Edward R. Wheeler, Spencer, was elected president; Dr. Samuel B. Woodward, Worcester, vice-president; Dr. Lester C. Miller, Worcester, secretary; Dr. George O. Ward, Worcester, treasurer, and Dr. Charles A. Peabody, Worcester, orator.

Alumni Association of Dartmouth Medical College (Hanover, N.H.).—The following officers were elected at the annual meeting of this Association held in Concord, May 16: Dr. Granville P. Conn, Concord, president; Drs. Milton S. Woodman, West Lebanon, and Alonzo S. Wallace, Nashua, vice-presidents, and Dr. Howard N. Kingsford, Hanover, secretary and treasurer.

Chattanooga Medical College Alumni Association.—At the annual meeting of this Association, May 23, the following officers were elected: Dr. D. W. C. Genter, Middlesboro, Ky., president; Drs. Thomas H. Appleton, Collinsville, Ala., J. B. Hughes, Spring Place, Ga., and J. J. Stringer, Oak Vale, Miss., vice-presidents, and Dr. German Haymore, Chattanooga, Tenn., secretary.

Middle Tennessee Medical Association.—The fourteenth semi-annual meeting of this organization was held in Shelbyville, May 16 and 17. Fayetteville was selected as the next place of meeting. Dr. Reginald Stonestreet, Nashville, was elected president; Dr. George W. Moody, Shelbyville, vice-president, and Dr. James K. P. Blackburn, Columbia, secretary and treasurer.

Brazos Valley (Texas) Medical Association.—This Association held its semi-annual meeting at Calvert, May 15, and elected Dr. Daniel Parker, Calvert, president; Drs. Felix R. Collard, Wheelock, and Selwyn P. Rice, Marlin, vice-presidents; Dr. John W. Hudson, Milano, secretary, and Dr. Wellington B. Briggs, Easterly, treasurer. The November session will be held at Bryan.

Worcester North District (Mass.) Medical Society.—The annual meeting and banquet of this Society was held at Fitchburg, April 22. Dr. Herbert H. Lyons, Fitchburg, was elected president; Dr. Charles E. Bigelow, Leominster, vice-president; Dr. Walter F. Sawyer, Fitchburg, secretary; Dr. Eustace L. Fiske, Fitchburg, treasurer, and Dr. Atherton P. Mason, Fitchburg, librarian.

Long Island College Hospital Alumni Association.—The twenty-first annual reunion and banquet of this body was held May 13, the graduating class being the guests of the Association. Dr. William F. Campbell was elected president; Dr. Burr B. Mosher, vice-president; Dr. Thomas A. McGoldrick, secretary; Dr. John O. F. Hill, treasurer, and Dr. William S. Hubbard, historian, all of Brooklyn.

Erie County (Ohio) Medical Society.—The annual meeting of this Society was held in Sandusky, May 2. The following officers were elected: Dr. Charles Graefe, Sandusky, president; Drs. Maro J. Love, Bloomingville, and Elwood Stanley, Sandusky, vice-presidents, and Dr. Henry C. Schoepfle, Sandusky, secretary, and treasurer. Delegates to the AMERICAN MEDICAL ASSOCIATION were also elected.

Camden County (N. J.) Medical Society.—The annual meeting of this Society was held May 14, and the following officers were elected: Dr. William R. Powell, president; Dr. John G. Doron, vice-president; Dr. Paul M. Mecray, secretary; Dr. Ernest S. Ramsdell, treasurer; and Dr. Harry H. Sherk, historian, all of Camden. A large number of delegates to the AMERICAN MEDICAL ASSOCIATION were elected.

Baltimore County (Md.) Medical Association.—The annual meeting of this Association was held at Towson, May 16. The following officers were elected: Dr. James F. H. Gorsuch, Fork, president; Dr .R. Percy Smith, Sunny Brook, vice-president; Dr. William P. E. Wyse, Pikesville, recording secretary; Dr. Richard C. Massenburg, Towson, corresponding secretary, and Dr. Harry S. Jarrett, Towson, treasurer.

Michigan State Medical Society.—The following officers were elected at the annual meeting of this Society: Dr. Leartus Connor, Detroit, president; Drs. Beverly D. Harison, Sault Ste. Marie, Charles Douglas, Detroit, and Lincoln P. Parkhurst, Middleville, vice-presidents; Dr. Andrew P. Biddle, Detroit, secretary, and Dr. Charles E. Hooker, Grand Rapids, treasurer. It was voted to hold the 1902 meeting in Port Huron.

Jefferson Medical College Alumni Association.—The annual meeting and banquet of this Association was held, May 14, in Philadelphia. The following officers were elected: Dr. William H. Hartzell, Allentown, president; Dr. Henry Tucker, Philadelphia, corresponding secretary; Dr. Frank C. Hammond, Philadelphia, treasurer; Drs. Hobart A. Hare, Orville Horwitz, Joseph S. Neff, and George B. McClellan, vice-presidents.

Southern Illinois Medical Association.—At the annual meeting of this Association held in Metropolis, May 17, the following officers were elected: Dr. Obed A. Dean, Campbell Hill, president; Drs. James A. Helm, Metropolis, and M. D. Empson, Hartford, vice-presidents; Dr. Orange B. Ormsby, Murphysboro, secretary; Dr. Charles E. Riseling, Murphysboro, assistant secretary, and Dr. Alexis T. Telford, Menard, treasurer.

Mercer County (N.J.) Medical Society.—At the annual meeting of this Society, held in Trenton, May 14, Dr. George H. Parker was elected president; Dr. Alexander Armstrong, vice-president; Dr. George R. Moore, secretary; Dr. Dunbar Hutchinson, recording secretary, and Dr. Irenaeus M .Shepherd, treasurer, all of Trenton. Delegates to the State Medical Society and the AMERICAN MEDICAL ASSOCIATION were also selected.

Iowa Medical Women's Social Society.—The fourth annual session of this important adjunct to the Iowa State Medical Society was held in Davenport, May 14. The following officers were elected: Dr. Margaret E. Colby, Clear Lake, president; Drs. Lenna L. Meanes, Des Moines, and Kate A. Hogle-Mason, MountVernon, vice-presidents; Dr. Jennie McCowen, Davenport, secretary, and Dr. Agnes Eichelberger, Sioux City, treasurer.

Arkansas State Medical Society.—The twenty-sixth annual meeting of this Society was held at Hot Springs, May 14, 15 and 16. The following officers were elected: Dr. Frank Vinsonhaler, Little Rock, president; Drs. C. R. Chenault, Helena, and William N. Yates, Fayetteville, vice-presidents; Dr. Joseph P. Runyan, Little Rock, secretary, and Dr. Richard C. Thompson, Pine Bluff, treasurer. Little Rock was selected as the meeting-place for 1902.

Medical Association of Montana.—The twenty-second annual meeting of this Association was held in Great Falls, May 15 and 16. The following officers were elected: Dr. Thomas J. Murray, Butte, president; Drs. T. J. McKenzie, Anaconda, and Louis Bernheim, Butte, vice-presidents; Dr. Benjamin C. Brooke, Helena, secretary; Dr. James F. Spelman, Anaconda, corresponding secretary and historian, and Dr. George H. Barbour, Helena, treasurer. The next meeting is to be held in Butte.

Morganfield District (Ky.) Medical Society.—At the fifth annual meeting of the society held at Henderson, May 13, it was decided to change the name of the organization to the "Ohio Valley Medical Association." The following officers were elected: Dr. Cyrus B. Graham, Henderson, president; Drs. Thomas A. Frazer, Christian County, James W. Stone, Henderson, and Labe J. Sigler, Clay, vice-presidents; Dr. Wiley L. Dixon, Morganfield, secretary; Dr. J. A. Humphrey, Henderson, librarian, and Dr. S. S. Amerson, Sullivan, treasurer.

William Pierson Medical Library Association.—Formal organization of this Association was effected at Orange, N. J., May 14. It was announced that in addition to her gift of the extensive and valuable medical library of Dr. Pierson, his widow had given the association $5000 as an endowment fund. Arrangements have been completed for housing the library in a special alcove at the Stickler Memorial Free Library, where the books will be available for the study of any regular physician, and for a room in the library building for the exclusive use of the members of the association, where they may read or study the books in the medical library alcove and where meetings may be held. The following officers were elected: Dr. Thomas W. Harvey, Orange, president; Drs. William J. Chandler, South Orange, and Dr. Richard C. Newton, Montclair, vice-presidents; Dr. Richard D. Freeman, South Orange, secretary; Dr. J. Hammond Bradshaw, Orange, treasurer, and Dr. M. Herbert Simmons, Orange, librarian.

PHILADELPHIA PATHOLOGICAL SOCIETY.

Meeting held April 25, 1901.

President Dr. Frederick A. Packard in the chair.

Trichinella Spiralis, Trichinosis and Trichina Inspection. A Zoological Study.

DR. CHARLES WARDELL STILES, Washington, spoke upon this topic. According to the speaker the subject of trichina might be viewed from several aspects, such as the hygienic and economic. On this occasion he felt that the choice of the subject was an appropriate one since the discovery of this disease had been made by a Philadelphia physician and scientist—Dr. Joseph Leidy in the year 1847. It was interesting to note the incidents connected with this finding. The history was that while this scientist was eating a ham sandwich, he observed that in the meat small peculiar bodies could be seen scattered throughout its substance. Brushing a few particles aside, he subsequently placed them under a microscope, and found the trichina. As a result of this discovery the most bitter political fight has been made against an American food-stuff than from any discovery ever made. It has cost more paper, ink, and money than any hygienic discovery. In one sense it has given more impetus to bacteriology than any other discovery. In 1848 a German investigator found the trichina spiralis in another animal than the hog. In 1870 when American pork began to compete with other markets of the world the discovery which Leidy had made, was used as an argument for the exclusion of American pork. It is difficult to estimate the financial loss to this country resulting from this controversy, but it doubtless runs up into hundreds of thousands of dollars. Later American pork was admitted to the market through the custom houses in Germany, and what has been the result? By this admission the most thorough system of preventive measures against diseased foods that has probably ever been instituted.

The speaker then outlined the life history of the trichina spiralis dividing it into three stages. The worm is swallowed by man and on gaining admission into the alimentary tract, the females burrow into the muscular walls and become encysted. Subsequently the male and female embryo burrow outward toward the muscles and undergo the same process. Hogs contract the disease by eating infected human offal. Rats by eating infected pork, human cadavers, and by eating one another. Unlike diphtheria and smallpox, trichinosis does not give rise to epidemics.

As to the prevention of the disease the German method is to prohibit as an article of food pork which has not been thoroughly cooked. That degree of temperature which will coagulate albumin, will kill trichina. The government of Germany has also instituted a very expensive system of inspection of pork, by a corps of meat-inspectors supported by the state at an expense of $3,700,000 per year. To do such work in America a corps of 65.000 microscopists would be necessary. Observations have demonstrated that 2 per cent. of the hogs of America are infected with trichina. The largest outbreak of the disease restricted to one community occurred in Massachusetts where 48 cases had been reported.

The speaker was opposed to the system of trichina inspection by Government microscopists. This system would tend to lead to a false feeling of safety, and persons might then eat infected pork, thus increasing the number of cases of the disease. Thus of 3388 cases of trichinosis found in Germany 132 deaths had resulted from errors of inspection. During the exclusion period of American pork 4083 cases of trichinosis had occurred in Germany. During the years from 1892 to 1898 not one case of trichinosis could be traced to American pork.

In discussing this paper Dr. F. A. Packard stated that several years ago he had endeavored to infect guinea pigs with meat containing trichina without successful results.

DR. J. A. SCOTT spoke of the occurrence of eosinophilia in trichinosis.

DR. RANDLE C. ROSENBERGER spoke of a recent case of trichinosis occurring at the St. Joseph's Hospital in which the eosinophiles numbered 4 per cent.

DRS. A. A. ESHNER, and J. D. STEELE spoke.

In closing Dr. Stiles detailed the method of "pickling" American pork by injecting down the sheath of the long bones a preservative fluid such as saltpeter, salt, and sugar. The old method consisted in simply allowing the pork to be immersed in this fluid, which was not so apt to destroy trichina nor to prevent decomposition of the meat, as by the newer method. Pork packers have been warned to never use borax as a preservative. The government exercises no control over the sale of pork to be carried from one of its cities to the other, nor of the chemicals to be used. As to pork for exportation it must always be thoroughly pickled.

After the meeting Dr. Stiles was tendered a reception at the University Club.

Meeting held May 9.

President Dr. Frederick A. Packard in the chair.

Case of Ball-clot in the Auricle. Death by Occlusion.

DR. W. S. WADSWORTH reported and exhibited specimens from such a case. The previous history was not known except that the man had for some time been on a prolonged debauch, and had been an employe of a factory where he was doing very hard work. His death came on suddenly. At the autopsy a round and large clot was found loose in the auricle, and surrounded by a currant-jelly clot. The clot was round or oval in shape, and probably two inches in length and one and a half inches in thickness. It was enveloped in a more or less tenacious coat which stripped off readily. The center of the clot was a deeper red color. No organization of the clot had probably taken place. The length of time which it had been in the heart of course could not be estimated accurately, but it had probably been present in the auricle for a month or more.

DR. JOSEPH MCFARLAND had seen emboli in nearly all the cavities of the heart. In one case an embolus was the size of a grape. He had recently seen two cases of ball thrombi in the left auricle.

Hemorrhagic Pachymeningitis and Spinal Tumor.

DR. F. S. PEARCE presented "Two Specimens of Hemorrhagic Pachymeningitis, and Tumor in the Spinal Cord." One specimen of pachymeningitis had occurred in the service of Dr. James Tyson, and the other in his own ward. Both of the patients had been males, both were unilateral, and both were probably of chronic duration. One patient was 38 years, the other 71 years of age. In his patient it was suspected that cerebral hemorrhage had taken place. In the case of Dr. Tyson the patient had suffered from hemiplegia, later dying of nephritis. In this latter case a spastic condition was present. In the case of Dr. Tyson the hemorrhage involved the right side of the body, while in his patient the hemorrhage was on the opposite side.

The tumor of the spinal cord seemed to spring from the dura mater in the thoracic region of the cord and producing pressure to such an extent that the cord was completely flattened. In this case the sensation of the lower extremities were only slightly obtunded, but the functions of the cord did not seem to be otherwise impaired.

DR. JOSEPH MCFARLAND then detailed the microscopical appearance of the tumor. He had found a great deposit of lime salts, which was deposited in a peculiar fashion while the general histologic appearance was unusual. The tumor might have been an endothelial growth of cholesteotoma.

Diphtheria Bacilli in Noma.

DR. J. WALSH, after studying several cases of noma, had in several found pure cultures of diphtheria bacilli. He had made diagnosis of diphtheria bacilli only after subjecting the micro-organisms to certain tests, such as injecting it into guinea-pigs, and rabbits, and afterwards by culture methods. Smear cultures had also been made, and afterwards the staining properties had been studied. In most of the cases there had been a mixture of the streptococci, staphylococci and other micro-organisms together with the diphtheria bacilli. The speaker then detailed a series of seven cases giving the result of his findings in these cases. Four of these cases had begun as stomatitis. Of 15 cases of ulcerative stomatitis, in only one was diphtheria bacilli found. In one instance at a certain hospital there were 15 cases of stomatitis, but in these no diphtheria bacilli were found. In some of the cases of noma there had been a previous history of diphtheria a short while before the development of noma. The speaker stated that in this disease different writers had found different kinds of micro-organisms. Noma is often present after an attack of measles.

New Apparatus.

DR. W. W. BARCOCK exhibited apparatuses for rapidly measuring culture media, for washing pathological specimens, and for mounting specimens imbedded in celloidin. The first apparatus consisted of a tube serving the purpose of a burette, which was graduated and under the control of two pinch-cocks, which on being pressed would alternately open and close two separate rubber tubes, thus allowing the fluid to run out of one tube while at the same time the other tube would become full of fluid from atmospheric pressure. The second apparatus was for washing morbid specimens. It consisted of a copper pan, inside of which was another smaller compartment, and so arranged that when a wire sieve was placed over it, and water allowed to enter the pan it would circulate up into the bottles containing the specimens which were inverted over this sieve. In this way a constant stream of water could be made to permeate the specimens quite rapidly.

Rupture of Aorta.

DR. W. E. HUGHES and DR. JOSEPH MCFARLAND presented specimens of a "rupture of aorta." The patient had been a man of 40 years, but the history was indefinite. At the autopsy the pericardial sac was filled with blood. The pericardium itself was normal. The weight of the heart was 650 grams, and contained currant-jelly clots. All the great vessels were filled with blood. A few patches of atheromatous plates had been found. In the ascending arch of the aorta there had been a laceration of the inner coats thus permitting the blood to dissect its way upwards. The lungs were edematous, and the pleura contained serous fluid.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting of Section of Medicine, April 16, 1901.

Dr. E. Franklin Smith in the Chair.

Case Illustrating the Influence of Arterial Spasm on Left Heart.

DR. JUDSON DALAND, Philadelphia, reported this case as an introduction to a discussion on the relation of arterial changes to the heart. The case was that of a healthy girl of 10 years who, after having eaten a large quantity of a certain table sauce, the chief ingredient of which was apparently capsicum, had been made so ill that she had been admitted to hospital. She suffered from headache, fever, anorexia, difficulty in swallowing and convulsions, and the urine contained a few blood cells and albumin one-fourth by bulk. The pulse was over 100 and somewhat irregular, and the radial arteries felt like wires. From the physical signs in the chest it was inferred that the condition of the heart was rather one of acute dilatation than of hypertrophy. Most of the symptoms had disappeared in a few days, and in two weeks the condition of the urine and of the blood vessels was once more normal.

DR. WILLIAM H. THOMPSON said that in all probability acute dilatation of the heart was quite common in scarlatina and in acute rheumatism, as a result of arterial spasm. The small, high tension pulse was so characteristic of scarlet fever that when a physician was called to see a child who had been suddenly taken ill with vomiting and high fever, there was good reason to suspect scarlet fever, even though the eruption had not yet appeared. Dr. Thomson said that he had made a number of observations on the specific gravity of the urine in chronic nephritis, and these had revealed the fact that there were remarkable fluctuations in the specific gravity not only from day to day, but from hour to hour. During these observations the total quantity of urine for the twenty-four hours had been determined, and no change had been made in diet or medication. His explanation was that vasomotor storms occurred in the splanchnic area, and this he considered significant as pointing out the fact that the heart is probably often subjected to intermittent strain, and that this may explain the tendency to cardiac hypertrophy. This strain occurs prior to the atheroma, for it was well known that there may be extensive atheroma without cardiac hypertrophy. He believed that arterio-capillary disease is always the result of toxemia, and that the great therapeutic measure in such cases was fresh air, because this tends to counteract the chemical changes in the blood.

DR. BEVERLEY ROBINSON said that as it was well known that under certain circumstances cardiac hypertrophy is a beneficent provision of nature, it behooved the physician to think carefully before prescribing nitroglycerin or other vasodilators merely with the object of overcoming an increased arterial tension.

DR. RICHARD VAN SANTVOORD remarked that his experience had taught him that the loudness of the second heart sound is no indication of high arterial tension or of the strength of the heart, and this he explained on the theory that the energy with which the valve closes is dependent upon the difference in the blood pressure on the two sides of the valve.

The Climate of Long Island.

DR. LEGRAND DENSLOW read a paper on this subject, based on careful observations made by the government metereological observers. In this study and analysis the author brought out the novel and important practical information that there is a region in the eastern end of Long Island where the atmosphere is remarkably dry and where each year there are over 100 more days of sunshine than in New York City. In these respects this region compares favorably with other and better known places in the far West. Such a place should prove desirable for residence for persons suffering from diseases of the heart, lungs and kidneys, or from rheumatism.

Stated Meeting of Section on Genito-Urinary Diseases, April 17.

Dr. William K. Otis in the Chair.

Gonorrheal Myositis.

DR. MARTIN W. WARE reported this case, commenting upon

the great rarity of the condition in medical literature, and presenting sections under the microscope and photomicrographs. He had been able to find only three cases of gonorrheal myositis on record.

Modification of Cook's Method of External Urethrotomy Without a Guide.

DR. PERCY R. BOLTON described the method as follows: The position of the apex of the prostate is determined through the rectal wall, and with the finger on this part, the knife is carried up toward the apex until the urethra is entered. The external wound is then enlarged and the division of the stricture completed. His modification consists in making a curvilinear incision across the perineum, exposing the tendinous center of the perineum. The attachment of the sphincter ani is divided and reflected, and the triangular ligament incised transversely. The anterior fibers of the levator ani are pushed backward and the prostate exposed. With the apex of the prostate as a guide, an incision is made into the urethra in the middle line, and prolonged forward.

Gonorrheal, Auto-Reinfection of the Urethra.

DR. FERD. C. VALENTINE presented a paper on this subject. He maintained that in every case the focus of disease could be detected by persistent search. The best aid to diagnosis was a microscopical examination of the sedimented urine. The best treatment was by dilatation and irrigation. Sometimes the diagnosed glands would require direct applications. For purposes of diagnosis one was warranted in producing sufficient irritation to set up a discharge.

DR. LOUIS HEITZMANN said that after many years of patient work he was in a position to assert most positively that microscopic examination of the urine was of very great value in determining the locality of the disease. If a number of examinations of the same case were made at different times, and inflammation of the genito-urinary tract was present, the epithelia sought for would be found.

DR. JOHN R. VAN DER POEL thought many cases of auto reinfection were the result of involvement of the prostate. In such cases, massage of the prostate followed by irrigation was the proper treatment. Good results often followed extreme dilatation, by means of special dilators, of certain portions of the anterior urethra.

DR. DOUGLAS H. STEWART remarked that he had never met with a case exhibiting slight moisture of the urethra in which the urine did not respond to Heller's test for albumin.

DR. FREDERICK R. STURGIS did not believe that the gonococci often invade the prostate. He had had poor success with irrigations, and preferred local applications of a 10 per cent. solution of protargol through the endoscope. For the anterior urethra he often made use of zinc injections with a hand syringe.

DR. W. W. OTIS said that the wonder was not that one occasionally met with cases of auto-reinfection, but that gonorrhea ever was thoroughly eradicated. The surface of the urethra was dotted over with hundreds of openings—the glands of Littré—openings large enough to admit a bristle. It must be evident that the germicides can not get down to the bottom of these glands or into the ducts of the prostate. Why some recover from gonorrhea without the use of a germicide, or, indeed, without any treatment, while others are persistently reinfected though subjected to the most approved treatment, was still an open question, but apparently the element of personal immunity was an important factor.

Stated Meeting of Section on Obstetrics and Gynecology, April 25.

DR. A. Brothers in the chair.

Dilatation of the Cervix.

DR. H. J. GARRIGUES read a paper on this subject. Among the medical methods of favoring cervical dilatation during labor were injecting into the cervix 1/40 of a grain of atropin dissolved in sterile water; painting the cervix with a 10 per cent. solution of cocain; the administration of 15 grains of chloral every twenty minutes for three or four doses; the administration of 10 grains of antipyrin every half hour for three doses. A slow but useful mechanical method of dilating the cervix was by inserting a strip of iodoform gauze into the cervical canal and packing the vagina with creolin gauze until the following day, when the dressing was to be renewed, and the packing carried still higher up into the cervical canal. Where a rapid dilatation was demanded, the manual method would be found excellent. It consisted in introducing first one finger, then two, three and four fingers, and finally the whole hand in the shape of a cone. The various forms of rubber-bag dilators were then described, and the statement made that lateral pressure was to be preferred to the pushing upward of a large conical mass. In urgent cases, some practitioners made use of Duhrssen's deep cervical incisions, but while they may occasionally save a child's life that might otherwise be lost, they exposed the mother to immediate danger and remote suffering.

Axis Traction Forceps.

DR. EGBERT H. GRANDIN said that few teachers of obstetrics and few practitioners seem to understand the advantages, under certain conditions, which this form of forceps has over all others. It was surprising that in this country axis traction had never gained a foothold. In 1879 it had been his privilege to attend for a number of months the wards of the maternity in Paris under Professor Tarnier, and he could vividly recall with what enthusiasm Tarnier had demonstrated to him the advantages of the axis traction forceps. Subsequently in his services at the New York Maternity Hospital and at the New York Infant's Asylum he had had ample opportunity to test this instrument and it was now his custom to carry an axis traction forceps to obstetric cases. Over and over again he had succeeded in effecting delivery where other men, more skillful than he, had failed with other types of forceps. Leverage was a necessary accompaniment of traction because it was infinitely difficult to pull in a straight line. Forcible rotation endangers the maternal parts, and moreover the fetus may not follow the movement of the forceps. For the low operation any variety of obstetric forceps should answer. The high forceps operation was limited in his hands to cases in which the membranes had ruptured and the presenting part had engaged. For the high operation traction must be made in the correct axis with the least expenditure of energy upon the part of the operator and with the least interference with the normal mechanism, such as rotation; also with the least compression of the fetal head and with the least danger to the mother's parts. These requirements were certainly best met with the axis traction forceps. With this instrument one substituted, for blind traction, sentient traction. The seesaw motion which almost inevitably enters into the application of the ordinary forceps does not enter into the application of the axis traction forceps. The following cardinal rule must be observed or the axis traction forceps would almost certainly slip: "While making traction the traction rod must ever remain parallel to and almost in contact with the handles." Neglect of this rule made the axis traction forceps a very dangerous instrument.

Version: Indication, Limitation and Technique.

DR. S. MARX at the outset confessed that he was strongly of the opinion that there is a large field for perforative instruments, believing that the life of the mother should be given preference over that of the child. He elects version over forceps for all cases in which the head remains above the brim. In all positions, good or bad, in which the head remains above the brim version should be elected early. In transverse or atypical positions prophylactic version, done as soon as the membranes have ruptured, serves the best purpose. In cases of placenta previa or where prolapse of the funis threatens the child's life, version is indicated. In general, version was indicated in all cases in which the life of the mother was threatened, as for example in uremic convulsions or embolism of the lung, presupposing, of course, full dilatation of the cervix. If the cervix were not fully dilated it must be rapidly secured by manual dilatation or by deep incisions before the version. The following rules should be borne in mind: Always be sure of the position and of the presentation. 2. Be sure that the

fetus is alive, or that its life is in no great danger, as determined if necessary by the introduction of the hand into the uterus and palpating the umbilical cord. 3. Do version if possible before rupture of the membranes or as soon as possible afterward. 4. As clinical experience has shown that after manual dilatation of the cervix the latter is prone to contract again speedily after the delivery of the head, immediate extraction in such a case should be practised after version. Dr. Marx said that he felt that an error was too commonly committed of using the feet as a means of traction during the extraction of the head, and that it was better to use them as a guide and trust largely to the *vis a tergo* for the delivery of the after-coming head. No operative method except perforation should be done in the presence of a dead or dying fetus. When the head was passing the contracted inlet a gain of three-fourths of an inch in the conjugate could be obtained by putting the woman for the time being in a position of exaggerated extension.

Symphyseotomy.

DR. EDWARD A. AYERS discussed this subject, based on a personal experience with the operation in 11 individuals and done 13 times. There had been no death attributable to the operation, no infection of the joint, no serious hemorrhage, and no general disability. No sutures had been used. Injury to the sacro-iliac joint need not occur, and union at the symphysis was greatly aided by slinging the pelvis in a U-shaped hammock. It was very important to secure full cervical dilatation before operating. The great majority of cases of pelvic contraction beyond the range of the forceps could be delivered by symphyseotomy.

Cesarean Section.

DR. E. B. CRAGIN discussed this operation. He said that he had done it nine times in the last three years, and had saved both mother and child in every instance except one. In that one the operation had been undertaken solely with the object of easily delivering a woman who at best was so far advanced in carcinoma of the uterus that she had but a short time to live. If the woman were in such poor condition as not to be able to stand an operation like Cesarean section, craniotomy should be done. If both mother and child were in good condition, and delivery by forceps or version were impossible, Cesarean section should be selected in hospital practice. In conditions of moderate pelvic contraction one must decide between Cesarean section and symphyseotomy. The abdominal incision could be made shorter by incising the uterus before bringing it up into the abdominal wound. To avoid adhesions forming between the uterus and the abdominal wall a portion of the omentum should be placed between them.

DR. CHARLES JEWETT said that version was an operation too much neglected, yet he sometimes used the forceps when the head was above the brim provided he could readily crowd it into the brim and hold it there while applying the axis traction forceps. The open wound for symphyseotomy seemed to him preferable to Dr. Ayers' subcutaneous method. The field for this operation was a small one. The results for both mother and child were not so good from symphyseotomy as from Cesarean section, but symphyseotomy presented some advantages where the woman had been long in labor.

CHICAGO MEDICAL SOCIETY.

Regular Meeting held April 24.

President Dr. James H. Stowell in the chair.

Four Cases of Surgery of the Ureters.

DR. EDWARD EVANS, of La Crosse, Wis., read a paper, by invitation, on this subject. Reference was made to the bibliography of ureteral surgery: its experimental exploitation; the demonstration of its practicability in the human subject; its technique; the possibility of relieving suffering thereby, preserving useful organs and prolonging life. Credit was given to the work of Van Hook, Martin, Frank, Peterson, Connell, Fenger, and others.

Case 1.—Intermittent hydronephrosis of fourteen years' duration; abnormal vessels adherent to ureter and causing kinking of same; ureterolysorthosis; recovery.

Case 2.—Valvular obstruction of left ureter due to oblique insertion; extra-pelvic operation; division of spur; transverse union; recovery.

Case 3.—Intermittent hydronephrosis; hugely distended pelvis and sacculated kidney; lateral implantation of ureter and kinking of same; extra-pelvic operation through lumbar incision after opening abdomen in mistaken diagnosis.

Case 4.—Cystitis; ureteritis; disappearance of right kidney by inflammatory changes; pyelonephritis of left kidney; suprapubic cystotomy; nephrolithotomy; rectal implantation of left ureter; death twenty months later from uremia.

DR. WILLIAM T. BELFIELD emphasized the use and value of the X-ray in the diagnosis of kidney and urogenital lesions prior to operative measures.

DR. CARL BECK stated that the results of implantation of the ureters into the bowel were uniformly the same, experiments on animals having shown that after some months, sooner or later, degenerative or infective processes in the kidneys took place. He referred to a case which had remained in very good condition a year and a half after he had implanted the ureters into the sigmoid flexure.

DR. JACOB FRANK pointed out that one very peculiar feature following implantation of the ureters was that the cystitis always terminated at the neck of the bladder, the inflammation never extending to the urethra.

DR. L. E. SCHMIDT spoke on the diagnosis of ureteral obstruction, and mentioned a method introduced by Dr. Kolischer and himself which had proved valuable in several cases.

A Symposium on Ulcer of the Stomach.

DR. N. S. DAVIS, JR., dwelt on the "Symptoms and Diagnosis of Gastric Ulcer." Attention was called to the frequency with which the malady occurs. Many pathologists have found evidences of former gastric ulcer or existing ulcer in from 3 to 10 per cent of those who were examined at autopsy. By the majority of practitioners only those cases are recognized in which hematemesis occurs, that is, in about one-third of all cases. A majority, instead of a minority, of all cases should be recognized. It is true that in certain ones a diagnosis is impossible. The characteristic symptoms of those in which hematemesis does not occur, but in which a diagnosis can be made, were fully described. The diminished acidity of the urine and the occurrence of an alkaline wave after meals, and the diminished amount of chlorids in the urine were described as evidences of hyperacidity of the stomach and as occurring in strange contrast to the conditions existing in cancer and chronic gastritis with which round ulcer is so often confused. Digestive leucocytosis exists in cases of gastric ulcer, but as a rule is slight or wanting in cases of cancer and chronic inflammation. Persistent and even anemic leucocytosis occurs in most cases, of course, but does not occur in round ulcer. The ratio of hemoglobin to red corpuscles often resembles that of pernicious anemia in cancer, but that of chlorosis in round ulcer. In both maladies hemorrhages often reduce both equally, at least for the time being. The differential diagnosis of the disease was fully described.

DR. WILLIAM A. EVANS discussed the "Pathology of Ulcer of the Stomach," describing sizes, outlines and situation. As to location, the seats of ulceration are the lesser curvature, the posterior surface, and near the pylorus. Other regions are less often affected. Occasionally the duodenum and the esophagus are the seat.

Under pathology the speaker discussed some questions of greater interest because of their obscurity, and some of these were the relation of sex; the relation of hyperacidity, chlorosis, thrombus and embolus, syphilis, method of healing, comparison with hemorrhagic erosions, question of scars, and the relation of ulcer to carcinoma.

The analysis of 7700 autopsies by Stawell would indicate that ulcer of the stomach is about as frequent in men as in women. Gluzinski says the majority of the ulcers occur in men. The usually accepted figures are, about twenty times as often in women as in men. Greenough and Joslin, as a result of a study of the cases in the Massachusetts General Hospital from 1888 to 1898, conclude that it is four times as frequent

in men as in women. Saundby says it is twenty times as frequent in women as in men.

Hyperacidity and ulcer of the stomach are generally associated. The speaker's opinion is that the hyperacidity results from the continued irritation of the ulcer, and not the ulcer from the hyperacidity. Neumeister and Frenzel have shown that the hyperacid gastric juice does not digest as readily as that which is normal. In any case of marked hyperacidity in a young woman, ulcer as an etiological factor is to be borne in mind. In ulcer of the duodenum no hyperacidity of the gastric juice can be demonstrated as a general proposition.

Among the other etiological factors recognized are embolus and thrombus. The anatomical arrangement of the celiac axis and of the gastric artery would make embolus infrequent. Besides, embolus is not common in people presenting the clinical picture manifested by a case of ulcer of the stomach. Thrombus can frequently be demonstrated.

That there is a relation to chlorosis is beyond question. Again, there is the difficulty of deciding which is the primary lesion. On the one hand, the loss of blood, and, perhaps, more important still, the direct absorption through the ulcer of incomplete digestion products can produce chlorosis. Usually the degree of anemia bears some relation to the loss of blood. On the other hand, women with ulcer of the stomach usually give a history of anemia preceding the ulcer. The same is not true of men. The ulcer does not repair until the anemia is lessened according to Fütterer. This might be true, and the chlorosis be only a contributing factor. Hemmeter and Stokes have collected 21 cases of syphilitic ulcer in the literature up to 1900.

Under the head of results of ulcer of the stomach, the essayist considered methods of healing, scars, carcinoma springing immediately from the ulcer and developing carcinoma from the scar. It is stated by Welch that 5 per cent. of all autopsies reveal scars at the site of healed stomach ulcers. But not every case of ulcer produces permanent scars—scars persisting for years. Scars in actively working organs tend to disappear in course of time. Ziegler in a late study says that ultimately muscle scar tissue is replaced by functioning muscle in many cases.

As to the relation of ulcer to carcinoma, Fütterer holds that carcinoma develops right in the ulcer as a result of physical injury. It develops on the side of impact. Billings quotes Lebert, Rosenheim, Zenker, Hemmeter and Kollmann as believing that carcinoma usually develops in healed gastric ulcer areas. Lebert states that 9 per cent. of carcinomas grow from such scars. Rosenheim says 6 per cent.; Zenker says most of the cases originate in such areas.

DR. JAMES B. HERRICK read a paper on "Treatment of Ulcer of the Stomach." He called attention to the fact that many of these ulcers healed spontaneously, as is proven by the clinical history of cases and by postmortem examinations, with accidental findings of typical scars. The conditions that tend to keep up the process are the general chlorotic state, the local circulatory condition, but above all, the irritation from food which excites peristalsis and vomiting and causes an outflow of the hyperacid gastric juices. Theoretically the best results should be obtained from the treatment securing most nearly perfect rest of the stomach, including freedom from peristalsis, from movements of the viscus, and attending movements of the body. Experience shows it to be true, that the more nearly these ideal conditions are met the better the result. Drug treatment is unsatisfactory. Treatment by light or milk diet gives better results. The results of Leube and others who employ his method are by far the best. Leube puts his patients to bed, applies hot applications over the epigastrium, and gives a minimum amount of a carefully selected food, with occasional drugs to correct hyperacidity. Of 556 cases Leube had examined, there was recovery in 74 per cent., improved in 22 per cent., unimproved 1.6 per cent., deaths 2 per cent.

The treatment by rectal feeding and rest in bed is really but a modification of the treatment of Leube, but it carries the rest of the stomach one degree nearer the ideal of complete rest.

Dr. Herrick then stated the objections to the method, that it was unnecessary, that it was impracticable, that the rectum would become intolerant, that nourishment was not absorbed, that the patient could not stand it and would become dangerously weakened, that the treatment was inefficient, and answered each objection in detail, showing that where the treatment was carefully carried out the objections did not hold. The objection, also urged, that it is difficult to make an accurate diagnosis of ulcer of the stomach, and that the patient might be subjected to this method of treatment when no ulcer was there, was admitted to be perfectly true, yet he regards it as much better to treat for ulcer what is not that disease than to let ulcer go untreated, and no case of gastric disease treated in this manner could be seriously harmed, even though it were not ulcer.

The technique of the treatment was described in detail, importance being laid on securing consent of the patient by a clear explanation of the reasons for the treatment and the advantage of having the patient under the care of a skilled nurse. Absolute rest in bed of from two to six weeks was advocated. Nothing should be allowed by the mouth, not even water, for from three days to three weeks. Nourishing enemas should be given at regular intervals; a cleansing enema of water given every morning; gradual substitution of liquid by the mouth for the enemata could be allowed when the pain, tenderness and vomiting had entirely ceased. It was better in all cases, if possible, to keep the patient on rectal feeding for at least one week. Light diet should be continued many weeks after the patient had left the bed. Attention should be given to the anemia, preferably by the administration of iron. The results of the treatment were almost immediate disappearance of the nausea, vomiting, and pain, and a rapid lessening of the tenderness on pressure. Hunger, thirst and sleeplessness were scarcely complained of after the first 24 hours. Emaciation and weakness rapidly disappeared when the feeding by the mouth was begun. In recent cases of ulcer a cure can be quite confidently predicted. In older cases, of months' or years' standing, there is generally an improvement, occasionally a cure. Certain cases are clearly surgical, chiefly those with alarming severe hemorrhage, or repeated small hemorrhages, not disappearing under rest and rectal alimentation; also cases of perforation, with peritonitis; cases complicated with adhesions, perigastritis, dilatation, etc., and cases with obstinate vomiting, or severe pain that resists the treatment by alimentation. Believing that other methods of treatment are unsatisfactory, and that this method by rest and rectal feeding offers the most favorable conditions for the natural healing of the ulcer, that it is safe, practicable and efficacious, he believes it should be tried in all cases and not reserved for the complicated or desperate ones.

DR. E. WYLLYS ANDREWS read a paper on "The Complications and Surgical Treatment of Gastric Ulcers." Complications requiring surgical treatment are: 1, perforation; 2, hemorrhage; 3, stenosis of the pylorus and vague incurable troubles from ulcers not cured by medical treatment. The writer believes that gastric ulcer is a surgical disease, just as much as an ulcer on the tongue would be. Only the dangers and difficulties of operating cause any such cases to be left in medical hands. As surgery justifies itself by its results, it transfers whole classes of cases to the surgical domain. Those which in the present status of the art may be claimed by surgeons are: All cases of perforation seen early; all cases of bleeding ulcer which have repeated hemorrhages, and most of those which have more than one very large hemorrhage; all cases of intractable gastric ulcer, which, with or without stenosis of the pylorus, seem likely to be benefited by gastroenterostomy or pyloroplasty.

The technique of laparotomy for perforation was given. Operations for bleeding ulcer are much less common, but have shown brilliant results. Two new cases were reported by Dr. Andrews. A new method of removing the ulcer by ligature *en masse* was described, with animal experiments to confirm the conclusions. Cases by Mansell-Moullin and other English surgeons were quoted in which the writer's technique had been adopted.

Operations for incurable stomach ulcer causing stenosis and other forms of disturbance were also alluded to. It was declared by the writer that most of the improvements in gastric surgery were being made by the French and German specialists, whereas American surgeons had taken the lead in intestinal surgery. Gastro-enterostomy is employed by Mikulicz, Doyen, Küster, König and others with brilliant results in gastric ulcer. Pyloroplasty has been done through the floor of a bleeding ulcer. The writer has had best success with pyloroplasty by the Heineke-Mikulicz method and believes it the safest operation, although a majority of writers favor gastroenterostomy.

DR. ARTHUR DEAN BEVAN spoke of the difficulty of making a diagnosis between gastric ulcer and carcinoma. He has seen several cases in the last few years where, on account of the youth of the individual, the history of the case, the excess of hydrochloric acid, the symptom-complex generally, a diagnosis was made of gastric ulcer, and yet operation disclosed carcinoma. He could not agree with Dr. Andrews that gastric ulcer was a surgical disease, any more than cholelithiasis was always a surgical affection. The treatment outlined by Dr. Herrick he considers of great value and rational. Rectal feeding and putting the stomach at rest constitute as rational a treatment for many cases of gastric ulcer as does gastroenterostomy.

DR JACOB FRANK mentioned retroperistalsis following rectal enemata in a case of gastric ulcer which came under his observation in 1883.

DR. HERRICK, in closing, said he had never seen retroperistalsis following rectal enemata, although a physician with whom he saw a case in consultation told him that he was positive the patient had vomited material which had been introduced per rectum.

THE AMERICAN SURGICAL ASSOCIATION.

Meeting held in Baltimore, May 7, 8 and 9, 1901.

(Concluded from p. 1491.)

Treatment of Arterio-venous Aneurysm of the Subclavian Vessels.

DR. R. MATAS, of New Orleans, read this paper and reported a case of perforation of the right subclavian artery and vein, through the scalinus anticus, by a bullet, the patient being a young man aged 24. The bullet also injured the brachial plexus and caused paralysis of the corresponding upper extremity. Ten days subsequent to the injury the operation was performed. An osteoplastic resection of the clavicle with disarticulation at the sterno-clavicular joint was made under local infiltration anesthesia with eucain B. and a temporary traction loop of silk was applied under the first portion of the anomalous subclavian artery, the innominate being absent. The vein was provisionally compressed above and below the anastomotic orifice. Profuse hemorrhage occurred when the vein was detached from the artery in spite of the fact that complete control of the subclavian at its orifice had been obtained, the bleeding being stopped by the application of double ligatures above and below the perforation of the artery. Indirectly the bleeding had its source in the vertebral and internal mammary. The artery between the ligatures was divided, the orifice in the vein closed by a lateral suture and venous circulation re-established. An undeformed bullet, 38 caliber, was extracted, and shock followed, the patient being restored by saline infusion. Primary healing of the operative wound and recovery, with partial loss of the hand and forearm from mortification caused from arterial ischemia and insufficient collateral circulation followed.

Phlebitis following Abdominal Operations.

DR. ALBERT VANDER VEER, Albany, N. Y., read a paper on this subject. Abdominal work gives more anxiety during an epidemic of grippe. Acute, perforative appendicitis is more prevalent in August and September, because of the diet in which young people indulge; also in December and January, because of exercise and exposure. In operations deep in the pelvis, ligating the uterine and ovarian vessels and applying a mass of ligature, it is fortunate we do not have more serious complications than is generally met with. Where these do arise suspicion may occur at once as to some failure in technique, but we should consider the great range of pathological lesions met with in the pelvis. It is very unpleasant, but very necessary, in these cases to keep the patient two or three times as long as promised at first. The essayist discussed four cases of phlebitis from his own experience.

The literature on this subject is very scarce and there is great question as to whether phlebitis in these cases is of septic origin. In his own cases he was not altogether sure but that the tight bandage may have had something to do with at least two of them. Never has there been delay in the union of the wound. Pain was one of the pronounced symptoms. When the lesion presented there was also a varying and accelerated temperature and pulse. Sex makes no apparent difference, neither does the nature of operation. In all four cases the patient was in a horizontal position, so there was no extra pressure upon the vessels of the extremities. The pelvis was not elevated. Loss of blood slight. Patients all strong previous to the operation, with the exception of case one. Ligatures used were silk; no catgut in the peritoneal cavity.

An Operation for the Radical Cure of Umbilical Hernia.

DR WILLIAM J. MAYO, of Rochester, Minn., stated that patients suffering from umbilical hernia are usually obese, with attenuated muscles. It is sometimes wise to reduce the weight before operating. The neck of the protrusion should be exposed early and its omental contents ligated off at this point, saving time. The writer has made the following method nineteen times. The steps of the operation are as follows: A transverse elliptical incision is made at the base of the hernial protrusion to and through the peritoneum. Traction upon the hernia exposes its contents at the point of entrance. Return of intestine, if present, and ligation of extruded omentum. Exposure of the aponeurosis above and below the margin of the incision. The lower flap of aponeurosis and peritoneum is slid upward three quarters of an inch into a pocket previously formed, between the upper margins of aponeurosis and the peritoneum; retention by two rows of buried sutures. The sliding can be made from side to side in the same manner, and was so performed in ten of the nineteen reported cases. If the ring is very large the overlapping from above downward is easier of performance.

Prevention and Cure of Post-operative Hernia.

DR. JAMES E. MOORE, of Minneapolis, in this paper said that ventral hernia is rare among good operators except after operations for acute appendicitis. The causes of ventral hernia are sepsis, improper closure of the wound and drainage. The location of the wound is of less importance than its proper closure. Each tissue should be united to its own kind by through and through stitches of silk-worm-gut and buried sutures if absorbable material. Buried sutures of unabsorbable material are objectionable and unnecessary. The crossed suture of Dr. Fowler is a very good one, but requires more time to apply it and causes more pain when removed than the through and through suture. Always avoid drainage when possible. Most cases of pelvic surgery requiring drainage are best drained through the vagina.

AFTERNOON SESSION.

DR. S. H. WEEKS read a paper on "Fractures and Dislocations of the Spine."

Giant Sacrococcygeal Tumors.

DR. CHARLES A. POWERS, of Denver, presented, with photographs, a paper on this subject. A male child was first seen at 3 months of age, at which time there was found an enormous growth occupying the sacrococcygeal region, extending laterally to the buttocks and forward in front of the anus. It was irregularly ball-shaped and in size as large as the head of a child of 6 years. Below and in front the growth was cystic; above and laterally it was firm and in places nodular. The skin over the tumor was of a bluish-red over the cystic parts, normal above and at the sides. Deep palpation showed

no gap in the bony structures. There was nothing abnormal about the rectum. The tumor was moved by the gluteal muscles, but the tension of the mass was not changed when the child cried. There was no paralysis nor anesthesia of the lower extremities. No operation was advised and the growth underwent spontaneous contraction. The skin did not ulcerate, the contents of the cystic portion were absorbed, and when the child was 3 years and 9 months old the tumor had shrunk to the size of a man's fist and was well flattened out over the sacrococcygeal region. The boy is as strong and healthy as other lads of his age; lies on his back and sits like other children: except for its mere presence the tumor gives no symptoms. While this growth lacks pathological confirmation, it is assumed that it is a teratoma or embryoid tumor having a double germinal substratum.

Radical Cure of Inguinal and Femoral Hernia.

DR. W. B. COLEY, of New York, made a report of 800 cases operated upon from 1891 to 1901. The writer believes that the decade that has just passed may be said to have definitely settled the question as to the possibility of permanently curing inguinal and femoral hernia by operative treatment. Whereas ten years ago the mortality of the operation for non-strangulated hernia was not far from 6 per cent, today, in competent hands, it is not more than one-half or one-quarter per cent. In addition to the comparatively large mortality ten years ago, the fact that 50 per cent. of the cases relapsed within two to three years after operation was sufficient to prevent the majority of patients from undergoing operations for radical cure. The writer believes that the method introduced by Bassini in 1890 the highest point in the evolution of the ideal operation for hernia.

Use of Silver Wire and Electricity in the Treatment of Aneurysms.

DR. LEONARD FREEMAN, of Denver, read this paper; it was discussed by Dr. J. M. T. Finney, of Baltimore, Dr. De Forest Willard, of Philadelphia, and Dr. R. Matas, of New Orleans.

DR. M. L. HARRIS, of Chicago, read a paper on "Movable Kidney: its Cause and Treatment," which appears in this issue of THE JOURNAL.

DR. S. J. MIXTER, of Boston, read the following papers: 1. "Two Cases of Abdominal Contusion: Fracture of Spleen—Splenectomy—Recovery: Fracture of Kidney—Nephrectomy—Recovery." 2. "Nephrolithotomy on Both Kidneys." 3. "New Method of Closing the Defect Following the Thorough Removal of the Breast."

Resection of the Chest Wall for a Large Sarcoma. Successful Use of the Antistreptococcic Serum.

DR. W. W. KEEN, of Philadelphia, read this paper. The author referred very fully to the details of the operation, together with the condition of the patient before and after. In concluding his remarks he called particular attention to: 1. The method of separating the tumor from the chest wall so as to determine more exactly the limits of the disease and lessen the size of the opening to be made in the chest. 2. The division of the ribs anteriorly and posteriorly prior to opening the pleural cavity; this diminished very much the period of danger in the collapse of the lung. 3. The use of Fels' apparatus, which was not satisfactory in this case and for which he prefers to substitute the apparatus of Dr. Bloom, of New Orleans, which he then showed to the Association or the apparatus of Matas, which was then demonstrated by its inventor. 4. The suture of the lung to the chest wall, which was followed by no untoward surgical result. It diminished very greatly the amount of post-operative pneumothorax and in fact one might almost say abolished it. 5. The use of the anti-streptococcic serum and as to whether it was the cause of the fall in temperature or only a coincident, the results seeming to be so striking. 5. The examination of the blood which was of great value as showing the reason for the continued high temperature and led to what the author believes to have been the proper treatment for the condition.

In the opinion of the Doctor it is too early to determine what will be the future of the patient but up to the present time, a period of nearly seven months, the results have been entirely satisfactory.

Pneumotomy of the Lung.

DRS. HEARN AND ROE reported and exhibited a case of a large abscess of the lung, of 22 years' duration, probably the result of local gangrene following pneumonia, in a male patient aged 26. Pneumotomy was performed and the abscess drained for two years with much improvement in general health; marked lessening of the previous horribly offensive odor, but without any healing or reduction in the size of the cavity. They again operated and excised a portion of the abscess wall, stitching the margins of the remainder to the skin surface, thus converting it into an open cavity, with relief from the annoyance of wearing a drainage tube and of cleansing the cavity and with practically entire cessation of odor. Although about six months have elapsed, the cavity remains unchanged and there is evidence of secondary bronchiectasis for which they assign two probable causes; i. e., cough and cirrhosis of lung tissue. To obliterate the original cavity and to relieve the bronchiectasis or cure it, they propose to remove the greater portion of the lower ribs, with their periosteum, in this way allowing the chest wall to collapse upon the lung.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Insomnia in Melancholia.

R.	Hyoscinæ hydrobromatis	gr. 1/4	015
	Camphoræ monobromatæ	ʒi	4

M. Ft. Cap. No. xii. Sig.: One capsule every two or three hours until effective.

Treatment of Typhoid Fever.

As stated in an article in Louisville *Jour. of Med. and Surgery*, the time to push medicine in treatment of typhoid fever is in the beginning. Produce free elimination by administering either magnesium sulphate or mercurous chlorid. The article further states that the use of intestinal antiseptics should be begun early. The following are recommended:

R.	Sodii sulphocarbolatis	ʒiiss	10
	Ext. hydrastis fluidi	ʒii	8
	Aquæ destil. q. s. ad	ʒii	64

M. Sig.: One teaspoonful in water one-half hour before taking nourishment, giving the nourishment at 3, 6, 9 and 12 o'clock. As a substitute for the sodium sulphocarbolate guaiacol carbonate may be given in 10-grain doses.

After taking nourishment the following should be given:

R.	Pepsini (scale)	ʒiss	6
	Acidi hydrochlorici dil.	ʒi	4
	Aquæ destil. q. s. ad	ʒii	64

M. Sig.: One teaspoonful after each feeding.

If constipation is present the substitution of cascara sagrada for the hydrastis in the first prescription is recommended, and the use of normal saline enemas to aid in making the bowels move.

Glycerin as an Antiseptic.

Glycerin is used a great deal as a basis for various medicines. Wunschheim, in *Indian Med. Record*, states that he has investigated its antiseptic properties. He tested the effect of glycerin on various forms of germs, alone and in combination with various antiseptic preparations. It has no special value as an antiseptic, and if used in combination with carbolic acid and other preparations, the antiseptics must be stronger than if used with water. A concentration of 10 per cent. carbolic acid is about as effectual as a 5 per cent. solution in water; but if glycerin be mixed with equal parts of water the disinfectant value is as good as in pure aqueous solution.

Leucorrhea.

According to *Merck's Archives* the following is of service in treatment of leucorrhea:

WHEN AN ACID DISCHARGE IS PRESENT.

℞.	Sodii boratis	℥iv	128
	Sodii bicarb	℥viii	256
	Pot. chloratis	℥iv	128

M. Sig.: Two level tablespoonfuls in two quarts of warm water twice daily as a douche.

WHEN ULCERATION OF CERVIX IS PRESENT:

℞.	Ichthyol	℥iv	16
	Iodoformogeni	℥i	4
	Lani	℥v	20
	Vaselini	℥iii	12

M. Sig.: Apply twice daily with a swab.

Ulcers of the Leg.

O. Schulze, as noted in *N. Y. Med. Jour.*, gives the following as dressing in ulcers of the legs:

℞.	Camphoræ (triturated)	gr. vi		36
	Zinci oxidi	℥i	4	
	Adipis q. s. ad	℥v	20	

M. Sig.: Use as a dressing to the ulcer; or:

℞.	Camphoræ (triturated)	gr. xii		72
dissolve in				
	Olei olivæ	℥v	20	
and add:				
	Zinci oxidi	℥v	20	

M. Sig.: Apply as a dressing upon gauze and renew twice a day.

Non-indications for the Use of Carbolic Acid.

The *Internat. Jour. of Surgery* states that it is better to discard carbolic acid entirely in treatment of wounds in children. Not only do they develop gangrene very readily from its continuous effect in wet dressing, but fatal cases of poisoning have been known to occur from the application of so weak a solution as 1 in 40.

Impetigo.

Impetigo is a disease which is very frequently found among the poorer classes, and several members of the family may be affected in routine order. Jay F. Schamberg, in *Internat. Med. Mag.*, advises that the crusts first be removed, followed by mild antiseptic applications. He advises the following lotion applied through the day:

℞.	Hydrarg. bichloridi	gr. i		06
	Glycerini	℥i	4	
	Spts. vini rect.	℥i	32	
	Aquæ q. s. ad	℥iv	128	

M. Sig.: Apply locally several times through the day.

The following ointment should be applied at night:

℞.	Hydrarg. ammon.	gr. x-xx		66-1
	Pulv. amyli			
	Pulv. zinci oxidi, āā	℥ii	8	
	Petrolati	℥ss	16	

M. Sig.: Apply locally at night.

He states that some lesions upon the face will yield more quickly to the following ointment:

℞.	Resorcini	gr. xv	1	
	Lanolini			
	Petrolati, āā	℥ss	16	

M. Sig.: Locally applied.

Or as a lotion the following may be used upon the face:

℞.	Resorcini	gr. xl	2	66
	Acidi borici	gr. xl	2	66
	Glycerini	℥i	4	
	Alcoholis	℥ss	16	
	Aquæ q. s. ad	℥iv	128	

M. Sig.: Apply locally to the case as a lotion.

He further states that to patches upon covered surfaces, a 10 to 20 grain solution of silver nitrate may be applied.

For Mosquito Bites.

M. Manquet recommends the following application to be applied to the face, upon tender surfaces, and in cases of very young children:

℞.	Formalin (40 per cent. sol. formalheyd)	℥v	20	
	Alcoholis			
	Aquæ, āā	℥x	40	

M. Sig.: Apply locally lightly without reaching the smarting point and thus avoid caustic action.

Ingrowing Toe Nail.

℞.	Sol. plumbi subacetatis	℥iv	16	
	Tinct. opii	℥v	20	
	Aquæ q. s. ad	℥viii	256	

M. Sig.: Apply on lint to reduce the inflammation and ease the pain.

Treatment of Cancer.

The *Med. Standard* gives the following formulæ in treatment of cancerous growths where surgery is non-indicated:

℞.	Acidi arsenosi	gr. xv	1	
	Alcoholis (absolute)	℥iiss	75	
	Aq. destil	℥iiss	75	

M. Sig.: Cleanse and dry the ulcer and apply with a brush. If no pain is caused in five minutes, another layer should be applied. —*Trunceck.*

Another formula is given as follows:

℞.	Acidi arsenosi			
	Orthoformi, āā	gr. xv	1	
	Alcoholis	℥iiss	75	
	Aquæ	℥iiss	75	

M. Sig.: Apply locally.

Bougard's paste is also mentioned as recommended by Danial Lewis, as follows:

℞.	Wheat flour			
	Amyli, āā	℥ii	64	
	Acidi Arsenosi	gr. xv	1	
	Cinnabar			
	Ammon. chloridi, āā	gr. lxxv	5	
	Hydrarg. chloridi mitis	℥iss	48	
	Sol. zinci chloridi (52 degrees F.)	℥viii	240	

M. Sig.: Spread a thick layer upon cotton and leave in position for twenty-four hours.

Treatment of Scabies.

Hopf, as noted in Internat. Med. Mag., states that miraculous results are obtained by the use of the following ointment, first having the patient thoroughly scrubbed for several minutes with green soap and hot water. He then puts the patient into a hot bath for several minutes with continued scrubbing. By this method the pustules and burrows are open. The ointment is then well applied:

℞.	Sulphuris loti	℥v	20
	Potassii carbonatis	℥iiss	10
	Adipis	℥iv	128

M. Sig.: Apply thoroughly and allow the ointment to remain on for twenty-four hours.

Treatment of Pertussis.

The *Brooklyn Med. Jour.* gives the following formula in treatment of pertussis during the paroxysmal stage:

℞.	Extracti belladonnæ	gr. i		06
	Aluminis	℥ss	2	
	Glycerini			
	Syr. zingiberis			
	Syr. tolutani			
	Syr. acaciæ āā	℥ii	64	

M. Sig.: One teaspoonful four times a day for a child 2 years of age.

Treatment of Keratitis (Inflammation of Cornea.)

℞.	Acidi borici	gr. ii		12
	Atropinæ sulphatis	gr. 2/3		04
	Aq. destil.	℥ii	8	

M. Sig. Put one drop into the eye morning and night until the inflammation subsides.

Treatment of Pulmonary Emphysema.

Dr. Cailla, in *Post-Graduate* recommends the following in treatment of emphysema following pertussis in children:

R.	Potassii iodidi	℥ii	8
	Spts. ammon. arom.	℥i	4
	Tinct. opii camph.	℥i	4
	Syrupi simplicis	℥iv	16
	Aquæ destil. q. s. ad	℥iii	96

M. Sig.: One teaspoonful in water every three hours.

Medicolegal.

No Damages for Death of Man or Beast from Fright.—The Supreme Court of Iowa says, in the case of Lee vs. the City of Burlington, that, as a general, settled rule with reference to human beings, no recovery may be had for injuries resulting from fright caused by negligence of another, where no immediate personal injury is received, and it sees no reason why the same rule should not be applied to animals. Damages, to be recoverable, must be such as, in the ordinary course of things, naturally follow from the act complained of, while death from fright alone is so unusual and extraordinary that one ought not to be held liable therefor.

Damages for Partial Paralysis and Mental Suffering,—The Court of Civil Appeals of Texas affirms, in the case of the Missouri, Kansas & Texas Railway Company of Texas vs. Miller, a judgment for $10,000 damages for a freight-train conductor who was alleged to have been seriously and permanently injured to the extent that he was rendered unable to work, had his health destroyed, suffered partial paralysis of his lower limbs from the hips down, and constantly suffered from mental anguish and pain. The court was satisfied by the evidence that he had been made a physical wreck, and a constant sufferer, both physically and mentally, and says that it is unable to see why his mental sufferings in contemplating his changed condition from a bright, happy life to a living death should not form one of the natural results of such an injury, and a proper subject of evidence and of damages.

Extent to Which Physician's Return is Evidence.—The Supreme Court of Illinois holds, in the case of Howard vs. the Illinois Trust and Savings Bank, that the rule which makes official registers of births and deaths admissible in evidence to prove the facts recorded without the usual tests of truth includes only those facts which occur in the presence of the physician making the return. The return is not evidence of matters of mere hearsay gathered up by the physician, of which he knows nothing. It is only evidence of facts necessarily within the knowledge of the person making the entry. Wherefore, for example, the court holds that a physician's return was not evidence that the child, the birth of which was reported, was his mother's second child.

Medical Examiner made Agent of Company.—The Supreme Court of Rhode Island holds, in the case of Leonard vs. the New England Mutual Life Insurance Company, that where an application for life insurance says, "The medical examiner will put the following questions, and fill out the answers in his own handwriting," this clearly makes the examiner the agent of the company for this purpose, and the company writes the answers as with its own hand. Moreover, in view of the facts in this case, that the application in question was signed without written answers to the medical part, that it was handed to the expressly authorized agent of the company to receive both the answers and the application, that there was nothing to show that the answers as given were false, and that under the terms of the application the examiner was acting for the company, and not for the insured, in writing down the answers, the court sees no valid ground of objection by the company to a finding which must result in excluding them from being any part of his application. And it holds that if the answers were correctly given, as must be assumed in this case, and mistakenly or wilfully written wrong—the application having been accepted in blank—the fault would lie with the insurance company, and not with the insured.

Insanity that Will Prevent Pronouncing of Judgment.—The Supreme Court of Arkansas says, in the case of State vs. Helm, that the reason of the rule for prohibiting the trial of a person while he is insane is the incapacity of one who is insane to make a rational defense, and for prohibiting the pronouncement of judgment against him while he is insane is, if sane, he might be able to show cause why judgment should not be pronounced against him, but, being insane, though having a sufficient cause, he might not make it known. It also concludes and decides that, if a person convicted of a crime is, by reason of a disease of the mind, unable to understand the nature of the indictment upon which he was convicted, and the verdict thereon, when explained to him by the court, and is unable to comprehend his own condition in reference to such proceeding, and by reason thereof might not make known to the court or the attorneys in charge of his defense the facts within his knowledge, if any, which would show that judgment should not be pronounced against him, he is, as to the pronouncing of such judgment, to be deemed insane, within the meaning of a statute which forbids the pronouncement of judgment against any person while he is in a state of insanity. But ignorance of the law, it holds, is not competent or sufficient to show such incapacity. And it holds that an instruction should not have been given which authorized the jury to find the defendant insane if they found from the preponderance of the evidence that he could not "intelligently reason."

Power to Exclude Unvaccinated Pupils.—The Supreme Court of Pennsylvania has affirmed the decision of the court of common pleas in the case of Charles J. Field vs. Martha L. Robinson, principal of the Keystone public school in Philadelphia, referred to on pages 101 and 167 of volume xxxv of THE JOURNAL. Here it was sought by mandamus to compel the principal to admit to the school a pupil without a certificate of having been vaccinated or had the smallpox. The principal's answer was that, under the act of 1895, she was compelled to exclude the child. This answer was demurred to, and the demurrer overruled. The "per curiam" (by the court) opinion of the supreme court is, in full, as follows: "We think the court below did not err in the ruling referred to in the assignments. In Duffield vs. School District, 162 Pa. 476, we held that school directors, in the exercise of a sound discretion, may exclude from the public schools pupils who have not been vaccinated. Whether a resolution excluding from the school pupils who have not been vaccinated is a reasonable one, is to be judged of in the first instance by the school directors. In the present state of medical knowledge, and of convincing opinion of those having charge of the public health, the courts will not say that such a resolution is an abuse of official discretion.' It has not been shown to our satisfaction that the act of June 18, 1895 (P. L. 203), is unconstitutional. For the reasons above stated, we dismiss the assignments and sustain the conclusions of the court below. Judgment affirmed."

Physical Condition as a Collateral Issue.—The Supreme Court of Iowa says, in the breach of promise case of Vierling vs. Binder, that it is true, no doubt, that physical defects or disease which incapacitate the woman for the marriage state or for the birth of children, if unknown to the other party to the contract at the time the contract was entered into, may be pleaded and proven in bar to an action for breach of the contract of marriage. Likewise the incapacity or unfitness of the man for the marital relation, accruing after the making of the contract, without his fault, or unknown to him at the time the contract was made, may be shown. But the diseased condition of the plaintiff, which the defendant set up in this case, was alleged as bearing on the question of whether the defendant had entered into any contract of marriage, and not as a bar to the action for breach of contract. Wherefore, the supreme court holds that the trial judge properly limited the jury, in the consideration of the evidence as to the plaintiff's physical condition, to the question of whether a contract of marriage was made, and properly refused to give instructions asked by the defendant directing the jury to consider this evidence as

tending to show that he was not liable for breach of the contract, if made. Furthermore, without discussing the question whether, if the defendant had properly pleaded such defensive matter as a bar, a physical examination of the plaintiff by physicians to be appointed by the court could have been ordered, on the defendant's motion, for the purpose of determining whether her physical condition was such as to present an obstacle to marriage, the court holds that it was not error to refuse to sustain such a motion in this case. It says that, as bearing on the question as to whether the defendant did promise to marry the plaintiff, the evidence of her physical condition was collateral only, and did not relate to the matter immediately under investigation. Certainly a physical examination should be ordered only when it is necessary to determine the existence of the very cause of action or defense pleaded in the case. Such an examination is for the purpose of bringing before the jury, as nearly as may be, the real evidence relating to the cause of action or defense.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Boston Medical and Surgical Journal, May 16.

1 *The Treatment of Psoas Abscess by Incision. Robert W. Lovett.
2 *Infantile Scorbutus. John Lovett Morse.
3 Neuritis Recurring after Atrophy of Both Optic Nerves in a Case of Brain Tumor. Edward R. Williams.
4 A Case of Accidental Inoculation of Cancer in a Fresh Wound. A. T. Cabot.

Medical News (N. Y.), May 18.

5 *On the Modern Treatment of Acute Gonorrhea. George Knowles Swinburne.
6 Chronic Gonorrhea. John Van Der Poel.
7 On Gonorrheal Conjunctivitis. Ward A. Holden.
8 Treatment of Gonorrheal Stricture of the Urethra. James R. Hayden.
9 The Treatment of the Complications of Acute Gonorrheal Posterior Urethritis. James Pedersen.

Philadelphia Medical Journal, May 18.

10 *The Disinfection of Wounds with Pure Carbolic Acid. Dr. Von Bruns.
11 A Further Report on a Case of Presystolic Murmur Associated with Pregnancy, etc., Originally Reported at the Meeting of the Association in May, 1899. James Tyson.
12 An Exceedingly Rare Case of Imperforate Anus. Charles B. Kelsey.
13 *The Relation of the Public to the Medical Profession. Wm. H. Thomson.
14 Gastric Tetany, with Report of Cases. Wm. Gerry Morgan.
15 *The Functional Tests of Hearing. William L. Ballenger.
16 Report of a Case of Rupture of the Eyeball from Contusion—Luxation of the Lens—Hernia of the Iris and Ciliary Body. J. W. Sherer.
17 Anisometropia. Norburne B. Jenkins.

Medical Record (N. Y.), May 18.

18 *The Recent Buffalo Investigations Regarding the Nature of Cancer. Roswell Park.
19 *Contracture of the Neck of the Bladder. Charles H. Chetwood.

American Medicine (Philadelphia), May 18.

20 Disease and Deformity of the Knee; Etiology, Diagnosis and Treatment. Daniel W. Marston.
21 *The Toxin of the Colon Bacillus. Victor C. Vaughan.
22 *A Plea for Uniformity of Technic in Widal's Reaction. Randle C. Rosenberger.

New York Medical Journal, May 18.

23 *The Pathology and Bacteriology of Uretero-intestinal Anastomosis. (Concluded.) F. Robert Zeit.
24 *Air, a Factor in Digestion. Edwin W. Moore.
25 *The Proper Administration of the Schott Exercises. Victor Neesen.
26 *The Use of the Suprarenal Capsule in Diseases of the Heart. (Concluded.) Samuel Floersheim.
27 Relations of Vascular Disease to Heart Disease. William H. Thomson.

Cincinnati Lancet-Clinic, May 18.

28 Valedictory Address, Cincinnati College of Medicine and Surgery. W. H. Wenning.
29 Progressive Medicine. Franklin H. Lamb.
30 Valves of the Rectum. Geo. J. Monroe.

St. Louis Medical Review, May 18.

31 *Ureter Catheterization in the Male; A New Ureter Cystoscope. Bransford Lewis.
32 *Veratrum Viride. R. C. Atkinson.
33 What Should be the Legal Requirements for the Commitment of Insane Persons to Hospitals for Care of the Insane. A. B. Richardson.

Medical Age (Detroit, Mich.), May 10.

34 Clinical Lectures in Neurology. Harold N. Moyer.
35 The Practice of Medicine as a Source of Income. D. A. K. Steele.
36 The Artificial Anastomosis of the Portal and Systemic Veins. Byron Robinson.

Medical Fortnightly (St. Louis), May 10.

37 The Surgical Treatment of Fibroid Tumors of the Uterus, with Specimens. W. W. Williams.
38 *Strangulated Hernia. J. J. Brownson.
39 Diseases of the Stomach. (Continued.) J. M. G. Carter.
40 *Research Experiments on the Physiological Action of Petroleum. G. Burbridge White.

Archives of Pediatrics (N. Y.), May.

41 The Blood in Infancy and Childhood. (Concluded.) Alfred Stengel and C. Y. White.
42 The Value of the Widal Reaction in Infancy and Childhood. John Lovett Morse.
43 Experiences in an Epidemic of Typhoid Fever: Fetal and Infantile Typhoid, Scarlatina Complicating Typhoid, and Vice Versa. J. Finley Bell.
44 A Case of Streptococcal Infection Successfully Treated by Antistreptococcus Serum. J. S. Fowler.

Journal of Nervous and Mental Diseases (Nyack, N. Y.), April.

45 *The Clinical Value of Astereognosis, and its Bearing Upon Vertebral Localization. G. L. Walton and W. E. Paul.
46 The Babinski Reflex. C. Van Epps.

Journal of Nervous and Mental Diseases (Nyack, N. Y.), May.

47 *A Study of the Cases of Tabes Dorsalis in Prof. M. Allen Starr's Clinic, Columbia University, from January, 1888, to January, 1901. Allan Blair Bonar.
48 *The Scapulo-humeral Reflex of Von Bechterew. William Pickett.
49 Psychical Form of Epileptic Equivalent. Charles Cary and Julius Ullman.
50 Cases Illustrating the Different Diagnosis of Cerebral and Hysterical Hemi-anesthesia. Charles K. Mills and Theodore Weisenberg.

New York State Journal of Medicine (N. Y.), May.

51 The Reason for the Existence of the New York State Medical Association. Alvin A. Hubbell.
52 *Ulcer of the Placenta; Umbilical Cord Severed Before Birth. Eden V. Delphely.
53 *Problems in Etiology, Diagnosis and Treatment of Tubercular Disease of the Upper Air Passages. Jonathan Wright.
54 Heart Disease. J. J. Walsh.
55 Unity of Action in the State Association. Parker Syms.

Physician and Surgeon (Detroit and Ann Arbor, Mich.), May.

56 *The Elimination and Curability of Syphilis. William F. Breakey.
57 *Predisposing Causes of Pulmonary Tuberculosis. Donald S. Campbell.
58 *The Early Diagnosis of Pulmonary Tuberculosis. Preston M. Hickey.
59 A Short Sketch of the Surgical Treatment of Otitis Media Suppurativa. Emil Amberg.
60 The Nonsurgical Treatment of Diseases of the Middle-ear. Eugene V. Riker.
61 The Cause and Failure After Club-foot Operations. Daniel LaFerte.
62 The Management of Trachoma. Charles H. Baker.
63 The Etiology and Rational Treatment of Disease. George B. McCallum.

Illinois Medical Journal (Springfield), May.

64 *The State Care of Consumptives. John A. Robinson.
65 *Sanitarium Treatment of Pulmonary Tuberculosis in Illinois. Florence W. Hunt.
66 Observations as to the Efficiency of the Chicago Health Department Method of Fumigation. Adolph Gehrmann.
67 *Cholelithiasis. J. W. Hairgrove.
68 A Gynecologic Examination. C. C. Hunt.
69 The Colonial Treatment of Epilepsy. Daniel R. Brower.
70 Diagnostic Sign of Smallpox. J. C. Sullivan.
71 Obstructions in the Pathway of Legitimate Medicine. J. H. Miller.
72 Surgical Introspection. H. W. Chapman.

Annals of Surgery (Philadelphia), May.

73 *The Surgery of the Spleen. J. Collins Warren.
74 *Concerning Prompt Surgical Intervention for Intestinal Perforation in Typhoid Fever, with the Relation of a Case. Harvey Cushing.

75 *Operative Paralysis of the Spinal Accessory Nerve. Pearce Bailey.
76 Hydatid Cyst of the Prostate. L. Bolton Bangs.
77 *The Surgical Treatment of Amebic Dysentery. Francis W. Murray.
78 *Some New Points in Tendon Surgery. F. S. Coolidge.
79 *Some Errors in Diagnosis in Conditions Resembling Appendicitis. George Emerson Brewer.
80 *Rare Complications after Operations for Appendicitis. Willy Meyer.
81 Report of Three Cases of Properitoneal Hernia. John Chadwick Oliver.

Indiana Medical Journal (Indianapolis), May.

82 Apparent Periodical Vomiting, with Report of a Case. B. Van Sweringen.

Buffalo Medical Journal, April.

83 *Paresis and Cerebral Syphilis. Arthur W. Hurd.
84 Surgical Complications of Typhoid Fever, as Observed at U. S. General Hospital, Fort Myer, Va. Vertner Kenerson
85 Excision of Hemorrhoids. William L. Dickinson.
86 Functional Disorders of Digestion. Clarence King.
87 A Brief Resume of the Grosser Animal Nature and its Application in Medicine. G. N. Jack.
88 Clinical Quantitative Analysis of Protoids in Stomach Contents. A. L. Benedict.
89 Mental Aberration, Consequent upon Pelvic Disease. L. G. Hamley.

New York Medicinische Monatsschrift, April.

90 *Einige Bemerkungen ueber Practische Harnanalyse. Louis Heitzmann.
91 Die Behandlung der Mittelohreiterung. J. Holinger.
92 Ein Fall von Schwerer Morphiumvergiftung Subcutane Einspritzungen von Hypermangansaurem Kali geheilt. Leonard Weber.

Journal of Tuberculosis (Asheville, N. C.), April.

93 Primary Pharyngeal and Laryngeal Tuberculosis, two Cases Cured. J. W. Gleitsmann.
94 *Ten Years' Experience with the Tuberculins. Chas. Denison.
95 Home Treatment of Tuberculosis. Lawrence F. Flick.

Medical Summary (Philadelphia), May.

96 Emulsion—Specimen Formulæ. Robert C. Kenner.
97 La Grippe. Geo. J. Monroe.
98 Typhoid Fever, etc. Floyd Clendenen.
99 Is Malarial Hematuria Produced by the Administration of Quinin? B. P. Wilson.
100 A Review of Hypnotics and Nerve Sedatives. C. W. Canan.
101 Sugar and the Doctor. Edwin W. Pyle.
102 Some More Dont's. D. H. Keller.
103 The Law of Growth, and the Cause of the Action of All Remedies. W. T. Ball.
104 Some Notes Concerning the Administration of Quinin. W. Thornton Parker.
105 The Seidlitz Salt. W. C. Buckley.
106 Fever and its Treatment. J. L. Wolfe.

Chicago Medical Recorder, May.

107 *Some Forms of Meddlesome Obstetrical Practice. J. Clarence Webster.
108 Four Cases of Ureteral Surgery. Edward Evans.
109 *The So-called Cardiac Neuroses: Classification; Etiology; Pathology. Lewellys F. Barker.
110 A Short Consideration of Some of the Points in the Pathology of Ulcer of the Stomach. W. A. Evans.
111 *The Surgery of Gastric Ulcer. Edward W. Andrews.
112 *The Treatment of Ulcer of the Stomach. James B. Herrick.
113 *The Gynecological and Obstetrical Significance of Girlhood. Henry P. Newman.
114 *The Skull and its Contents. W. H. Earles.
115 Endocarditis in Children, with Report of a Case. Rosalie M. Ladova.
116 A Case of Atresia Ani Vesicalis. Carl Beck.

Hot Springs Medical Journal, May.

117 Surgical Treatment of Abdominal Dropsy following Cirrhosis of the Liver. James T. Jelks.
118 Chronic Urethral Discharge due to Seminal Vesiculitis. Donald Kennedy.

Southern Practitioner (Nashville, Tenn.), May.

119 Removal of Foreign Bodies from the Trachea, with Report of an Interesting Case. Paul F. Eve.
120 A Modern Surgical Dressing. W. C. Wile.
121 A Corrector of Iodism. W. H. Morse.

Archives of Ophthalmology (New Rochelle, N. Y.), May.

122 Some Advancements without Tenotomies; a Description of the Operation Employed, and Remarks upon the Theory of Advancements in Such Cases. Herbert Wright Wootton.
123 *Alcohol and Tobacco Amblyopia in Cuba. C. E. Finlay.
124 Angiosarcoma of Choroid; Four Years' Observation. Kaspar Fischel.
125 An Arterio-Venous Aneurysm of the Retina. Dr. Seydel.
126 *A Contribution to the Symptomatology and Histology of Primary Myxosarcoma of the Optic Nerve, and the the Operative Removal of Such Growths by Kronlein's Method. Th. Axenfeld and Fr. Busch.
127 *Symblepharon Operation on the Double Everted Upper Lip with the Suturing of a Transplanted Flap to the Tendinous Expansion of the Superior Rectus Muscle, thus Forming a Permanent Retrotarsal Fold. Hugo Wolff.
128 *Changes in the Fundus in Pregnant and Lying-in Women. Bruno Bosse.
129 *On the Nutrition of the Cornea. Prof. Ulrich.

Texas Medical Journal (Austin), May.

130 A Brief History of the Recent Outbreak of Smallpox in Guadalupe County, and Remarks. Wm. Myers.

Charlotte Medical Journal, April.

131 Asthma. Charles S. Jordan.
132 Intubation and Antitoxin in the Treatment of Laryngeal Diphtheria. J. W. Long.
133 The Surgical Treatment of Empyema. Southgate Leigh.
134 Determination of Sex: a Review of the Subject, with Remarks. C. W. Canan.
135 Galvanic Electricity for the General Practitioner. A. G. Servoss.
136 Bromidrosis Pedis. F. R. Millard.

Medical Times (N. Y.), May.

137 Acute Endocarditis: Benign and Malignant, with Illustrative Cases. Thomas E. Satterthwaite.
138 A Clinical Lecture Delivered at the New York Post-graduate Medical School and Hospital, April 1, 1901. Henry Dwight Chapin.
139 Fecal or Intestinal Fistula. Wilfred G. Falick.
140 Alcohol in the Practice of Medicine. I. A. McSwain.
141 Diseased Tonsils a Menace to Health. C. F. Wahrer.

AMERICAN.

1. **Psoas Abscess.**—The questions discussed are: What is the result of incising psoas abscess as far as life and the function of the limb are concerned and, if the incision is advisable, what is the best method of operation. Fifty-four cases of psoas abscess treated at the Children's Hospital, Boston, between 1890 and 1900, are analyzed to answer these questions. The facts as to the age, sex, duration and location of the disease, site of abscess, temperature, mode of operation, after-treatment, results, time and cause of death, mortality, etc., are all taken up in detail. The practical conclusions, so far as they can be deduced from so small a number of cases, are: That fever is not necessarily an accompaniment of psoas abscess formation: that where it does occur the prognosis is not so good as where it is absent: that the best method of operation is by a lumbar or an iliac incision, and preferably the latter. It seems, on general principles, desirable to avoid recumbency for long periods, which makes drainage by an iliac incision almost impossible. It seems, therefore, best to put on a plaster jacket almost immediately after operation, to enable the patient to sit erect and the abscess to drain almost from the first. In this way the writer has obtained better results than by any other method.

2. **Infantile Scorbutus.**—Morse reports six cases of infantile scurvy, and discusses the etiology, treatment, etc. Anemia and general mal-nutrition are probably the earliest symptoms, but are not alone sufficient to warrant the diagnosis. Pain is almost always the first symptom, occurring on motion or handling; is generally in the legs, and next in the back and arms. From the patient's unwillingness to move on this account, paralysis is sometimes suspected. The extremities are often held rigid, and the legs usually flexed at the thighs and knees. Swellings appear as the disease progresses, usually at the ends of the diaphyses, and pyriform or symmetrical in shape. They are due to subperiosteal hemorrhage. If this is extreme, separation of the epiphyses may result. Sponginess and swelling of the gums are the most common symptoms that appear later. Cutaneous hemorrhages are common in severe cases. Hemorrhages from the nose, stomach and bowels are not very infrequent in the worst cases, and hemorrhages at the orbit may cause proptosis. Hematuria is rare and albuminuria rather infrequent. Fever is not a prominent symptom, and usually accidental. The pathologic lesions are, briefly, anemia, hemorrhage, and ulcerative stomatitis. Nephritis is an uncommon complication. The diagnosis is from

rheumatism, purpura, rickets, syphilis, Pott's disease, infantile paralysis and injury. Rheumatism is rare at the age at which this disease occurs. Purpura may be confusing in very severe forms, though the order of the symptoms is somewhat different. The early symptoms in scurvy become the latest in the purpura. Compared with rickets the diagnosis is easy, and if there is any question, the condition is almost certainly scurvy. Syphilis is also characteristic and generally easily distinguished. Pott's disease is rare in the first two years of life. Injury might be suspected if there has been a blow or fall, but other signs usually prevent confusion. An unaccountable stomatitis, with general hyperesthesia and pain on being removed, especially if it occurs on the child's being taken up, and in bottle-fed babies, should excite suspicion. The chief, if not the sole cause of infantile scurvy, is found in the diet, but it is sometimes difficult to see to what error scurvy is due. Generally it occurs in babies fed on prepared foods, but at present it is impossible to draw any definite conclusions as to just what elements in the food are responsible. The conclusions of the Committee of the American Pediatric Society seem within our knowledge, and more specific ones are considered hardly justifiable. They are, viz.: "1. The development of the disease follows in each case the prolonged employment of unsuitable diet. 2. In general, the farther a food is removed in character from the natural food of the child, the more likely it is to be followed by scurvy." In unrecognized and untreated cases death may occur, but with proper treatment recovery is certain. Treatment consists in the regulation of diet and the administration of orange or lemon juice; either alone may be sufficient, but a combination is best. No drug is of any use. Quiet on account of pain is advisable.

5. **Gonorrhea.**—The modern treatment of gonorrhea depends largely upon the microscopic diagnosis, which is insisted upon by Swinburne, and we cannot intelligently treat the disease without it. The findings of the microscope, however, may be misinterpreted, and he gives an instance in which the absence of the gonococci, after the use of a protargol injection, led to a serious mistake. In acute gonorrhea we have a self-limited disease, which, however, is capable of becoming indefinite in duration by neglect, mal-treatment or lack of constitutional vigor. The earlier the diagnosis and treatment the better the results. The germicide treatment favored by the author is the use of protargol in .5 to 2 per cent. solution heated for ten minutes. He dilutes this with a 2 per cent. cocain solution at first, gradually reducing the cocain with subsequent injections. If the case presents itself with the disease in full blast, this is still the best treatment, and if considerable progress has been made he still advises local treatment rather than wait for the decline. In the case of infection of the posterior urethra he uses a soft rubber catheter with a fountain syringe, passing the solution well into the bladder, it being shortly after urinated out. It is important in all cases that the patient should call for examination six weeks after all treatment has ceased to be sure of success.

10. **Carbolic Acid.**—Von Bruns recommends the use of pure carbolic acid as an application to wounds, immediately following it or counteracting it with alcohol, according to the method described by Phelps. He thinks that carbolic acid applied but once, markedly influences the condition of septic wounds, making their course simpler and less interrupted than is ordinarily observed.

13. **The Public and the Profession.**—The chief theme of Thompson's article is the need of public education on medical matters, which would do away with the popular delusions of "Christian Science," etc., if thoroughly carried out.

15.—See abstract in THE JOURNAL of March 30, p. 912.

18. **Cancer.**—The article by Park reviews some of the main conditions and findings in cancer, especially those reported in the Buffalo laboratory, which have been recently published by Gaylord. It is an argument for the infective and protozoan theory.

19. **Contracture of the Neck of the Bladder.**—The condition here mentioned as contracture of the bladder neck, consists of fibroid stenosis of the vesical sphincter or the fibrous infiltration of the glandular or muscular tissue encircling the neck and simulating, symptomatically, stone in the bladder and resembling senile prostatic hypertrophy by the obstruction it produces. The special instrument devised by the author, and his method of operating, which is similar to the Bottini operation excepting that it is made through a perineal opening, are described. A number of cases are reported.

21. **The Colon Bacillus.**—A previous article by Cooley and Vaughan, reporting attempts at isolation of the toxins from the bacilli cells, is mentioned and the facts learned in regard to the substance obtained are here summed up in the following: 1. The toxin is contained within the germ from which it does not, at least under ordinary circumstances, diffuse into the culture-medium. 2. The toxin is not extracted from the cell by either alcohol or ether. 3. Very dilute alkalies do not extract the toxin from the cells. 4. The germ substance may be heated to a high temperature in water without destruction of the toxin. 5. Boiling with a .2 per cent. solution of hydrochloric acid has but little, if any, effect upon the germ cell or its contained toxin. 6. Heating the germ substances for hours at a temperature of the water-bath, with water containing 1 to 5 per cent. of hydrochloric acid, breaks up the cell walls and lessens, but does not destroy, the toxicity of the cell content. Prolonged heating may render the toxin inert. 7. The toxin is separated from the cell wall by the digestion of the latter with hydrochloric acid, and pepsin is markedly active. Each of these propositions is demonstrated by experiments that are here detailed. There are many questions which the authors do not feel free to answer, such as: How is the toxin set free when the germ is introduced into the animal? What is the chemistry of the toxin? Is it a definite compound or is it composed of many substances, as mentioned by Ehrlich in his theory concerning the constitution of toxins? Does not the bacterial cell contain both the toxin and an immunizing body, or may the toxin be changed into an immunizing substance, either by artificial means or in the animal body? These questions await further study. The fact, however, that at least one of the bacterial toxins is a remarkably stable body, and can be retained in a dry stage in permanent form, justifies us in taking a somewhat more optimistic view concerning the probability of ascertaining the chemical constitution of these bodies than that recently expressed by Brieger and accepted by Ehrlich.

22. **Widal's Reaction.**—Difficulties in the recognition of Widal's reaction are pointed out by Rosenberger, who remarks on various methods and modifications that have been advised. Among these he mentions the time limit, which some observers think should occur within fifteen minutes, others requiring longer time. The method of preparing the dilution, the variations in the tests made, size of loop, etc., are also noted, and the points emphasized are: 1. The use of a uniform dilution. 2. A definite time limit. 3. An agreement as to what constitutes a positive reaction. 4. The use of a culture of definite age, and a clear statement as to incubation or non-incubation. 5. A decision as to whether dried blood, fresh blood or serum is to be used. 6 .A stated number of tests to be made in a given case. 7. To drop the terms "doubtful" and "pseudo" reaction. 8. Use of terms "positive" and "negative" only.

23. **Uretero-Intestinal Anastomosis.**—The conclusions of Zeit's article are that: 1. Descending infection always results from ureteral implantation into the rectum. The bacillus coli communis is the infecting germ. 2. The primary mortality is large, 84 per cent. in any operation. 3. In 120 dogs operated on, 91 per cent. died of peritonitis due to leakage of the urine and general sepsis and pyelonephritis during the first ten days. 4. Dogs living a longer time died of pylonephritis, pyelonephrosis and pyemia. 5. Dogs that apparently recovered had granular contracted kidneys due to induration and cicatrization of diseased areas. The rectum acts as a fair substitute for the bladder in such cases. 6. Dogs which had fully recovered from unilateral implantation were living by the other kidney, that of the side operated on being atrophied and granular from an earlier pyelonephritis. The active kidney was two to eight

times the size of the atrophic one. 7. A review of the literature shows that no better results can be expected in man than in animals. 8. The ureters are frequently dilated, but show little or no disease, no matter how extensive the kidney infection. 9. The bladder is always infected by the way of the urethra, whether emptied by operation or not. A purulent cystitis from staphylococcus and bacillus coli was found in every case. 10. An artificial immunity to infection by the colon group is the only hope of making uretero-intestinal anastomosis feasible.

24. **Air in Digestion.**—Moore's article insists on the importance of pulmonary aeration of the blood as a final factor in nutrition.

25. **Schott Exercises.**—Neesen's paper gives the proper method of making the resisting exercises of the Schott treatment, with illustrations.

26. **Suprarenal Capsule.**—The final installment of Floersheim's paper gives cases and concludes by saying that after administration of the suprarenal powder: 1. A weak and irregular-acting heart became stronger and more regular. 2. A dilated heart was contracted. 3. A diffused apex beat became localized. 4. A diffused, loud, and rough mitral regurgitant murmur became localized, smoother, and lessened in intensity, while in some cases the murmur disappeared. 5. A murmur which, owing to the extreme weakness of the heart, could scarcely be heard, became more distinct, thus aiding in the diagnosis. 6. The normal cardiac sounds, when indistinct, became clearer and more easily distinguished. 7. In some cases a rapid pulse became less rapid; in other cases a slow pulse became faster. 8. Patients who were very weak, with organic heart disease, were improved. 9. No effect was observed in organic heart disease when the pulse was strong and regular.

31. **Urethral Catheterization.**—Lewis describes a cystoscope devised by himself, which has the advantage of being readily sterilizable by heat or steam, and hot water, and is especially adapted to ureteral catheterization, and also of value for intravesical inspection and for applications to the vesical membranes.

32. **Veratrum Viride.**—The value and comparative harmlessness of this drug is mentioned by Atkinson, who says he has never heard of any fatal cases of poisoning from its use.

38. **Hernia.**—The conclusions of Brownson's article are in substance as follows: The danger of strangulated hernia is in delay. In all cases of abdominal pain a careful examination should be made. The mode of procedure will depend on whether the physician is a surgeon. In any case, gentle taxis may precede operative measures, but if it still fails under anesthesia, the surgeon should be called in. Every case of hernia, strangulated or not, should be subjected to radical cure.

40. **Petroleum.**—From an experimental investigation on animals, and also clinical experience with petroleum, White concludes that petroleum emulsion is inhibitory to the growth of putrefactive and pathogenic bacteria that interfere with digestion, and is, therefore, an agent for relieving flatulence, and an internal antiseptic. By its stimulation of peristalsis and increased diffusion of intestinal contents it aids nutrition, helps the natural movements of the bowels, relieves constipation and favors elimination. Its weight-increasing action is beyond doubt, from the experiments recorded. The weight gained under its influence is much greater in proportion than it or any other oil could afford, even if digested and absorbed. While petroleum is uncombinable and indigestible in itself when mixed with emulsion or digested food material, the effect is very different. It then causes an increased flow of this digested assimilated material through the portal system, and produces tissue more readily.

42.—See abstract in THE JOURNAL of May 11, p.1343.

45. **Astereognosis.**—Walton and Paul discuss the subject of astereognosis with special reference to its localization and publish a number of cases. They find the symptoms present in a very large percentage of hemiplegics, perhaps one third or more. The difficulties of examining for it are noticed. Every case of Rolandic disease coming under their observation since commencing this study has presented this symptom. In most of these cases capsular lesion was indicated by the paralysis, and it can be fairly assumed that in such cases involvement of the posterior limb is common, or that the sensory and motor fibers have no sharply defined line, but are more or less mingled. In case of complete hemianesthesia involving the trunk the condition is apt to be one of hysteria, with perhaps a superimposed organic lesion. In such cases as reported here, where the astereognostic type of anesthesia is the initial or prominent symptom, the authors say they must remain in doubt as to whether the sensory fibers of the internal capsules or cortical areas are primarily or solely involved, unless focal symptoms or other diagnostic features are added. The practical advantage of localizing the affection lies in the assistance it would give in selecting the seat of operation in case of suspected tumor or other lesions capable of surgical relief. Where there is no other localizing symptom than astereognosis, they think it would be a safe working plan in operable cases to select, for the center of the area to be exposed, a point in the ascending convolution at a height corresponding to the motor representative of the extremity involved. Such cases, however, will be few as compared with those in which the astereognosis is merely an additional symptom with others.

47. **Tabes Dorsalis.**—Bonar has analyzed cases of tabes which appeared in the neurological department of the Vanderbilt clinic since 1901, 286 in number, comprising about 1.2 per cent. of the whole number of cases. Of these, 84.6 per cent. were males, and 15.38 per cent. females, or a proportion of over 6 to 1. The various symptoms are discussed, and they are summed up in the order of their frequency, giving the percentage of cases in which each symptom was noted as follows: Loss of knee-jerks, 95.2; changes in knee-jerks, 3.69; Romberg symptom, 79.02; change in pupillary reaction, 78.67; pains in the legs, 78.67; ataxia in legs, 70.62; vesical disturbance, 62.23; paresthesia and numbness, 54.54; girdle sensation, 48.6; loss of muscular sense, 28.32; crises, 16.78; pains in trunk, 12.93; optic nerve atrophy, 8.74; ataxia in arms, 7.69; pains in arms, 6.99; loss or diminution of sexual instinct, 6; pains in thighs, 4.89; ocular paralyses (strabismus, diplopia, etc.), 3.21; nystagmus, 2.44; arthropathies, 2.09; constriction around legs or thighs, 1.74; tremors, 1.74; perforating ulcers of foot, 1.39; muscular atrophy, 1.39; anosmia, 1.04; deafness, .69; vertigo, .34; loss of taste, .34. These percentages are of interest considering the large number of cases studied. Only one or two of the symptoms were not recorded in all the cases.

48. **Scapulo-Humeral Reflex.**—Pickett has studied the scapulo-humeral reflex of Von Bechterew, which has its center in the cervical enlargement and is claimed by its finder as more constant than the biceps and triceps jerks or the scapular and palmar cutaneous reflexes. It is elicited, he claims, by the percussion hammer along the entire inner edge of the shoulder-blade, most markedly, however, at the inner edge of the scapula near the inferior angle, and consists in adduction of the corresponding humerus toward the trunk, often, also, in slight outward rotation, mainly produced by contraction of the infraspinatus muscle and apparently of the teres minor. Occasionally, by extending to the deltoid and flexors, it leads to abduction of the arm and slight flexion in the elbow-joint. It is claimed by Bechterew that it is absent in poliomyelitis, in the spinal form of progressive muscular atrophy, in neuritis involving the shoulder-girdle muscles; is diminished or absent in muscular dystrophy and spinal rigidity, and is exaggerated in cerebral hemiparesis, especially when there is marked atrophy of the shoulder-girdle muscle; 122 cases were examined by Pickett, of various diseases, including locomotor ataxia, Pott's disease, disseminated sclerosis, etc. From an analysis of the results he finds that it is increased in lesions of the upper segment of the motor system (pyramidal tracts) and is diminished or absent in those involving the reflex path (peripheral

nerves or spinal cord); it is less constant than those involving the biceps or triceps. It or a similar reflex may be obtained about as well at the point of the shoulder, may be elucidated at the base of the scapular spine as well as, or even better than, at the lower angle. Its muscular components are so variable and extensive, and the reflex is so complicated and indefinite as compared with others, that he does not feel much confidence in any deductions drawn from it until clear post-mortem data shall have established its exact correspondence with a somewhat limited portion of the cervical enlargement.

52.—This article was abstracted in THE JOURNAL of March 9, p. 681.

53.—Ibid., XXXV., p. 1171.

56. **Syphilis.**—The principal point of Breakey's article seems to be the treatment of syphilis by aiding elimination and allowing Nature to take its course and produce secondary symptoms before applying the specific treatment. The eruption is in a way eliminative, and active specific treatment should not be advocated until the situation is clear and it has a certain prospect of doing good.

57. **Tuberculosis.**—The theory adopted by Campbell is that the predisposition to tuberculosis and scrofula is due to hereditary syphilitic taint, not directly in the family but in the race. The contagiousness of tuberculosis must depend upon this primary condition. The question then is, can syphilis be subdued and controlled, and, if it can, we shall have accomplished more toward prevention of the spreading of tuberculosis and other kindred diseases than by all the other prophylactic measures that have been proposed.

58. **Tuberculosis.**—The importance of a thorough examination of a patient where tuberculosis is suspected is insisted upon by Hickey. He thinks that the question of infection from tubercular areas other than the lungs should be carefully investigated, the digestion and general condition thoroughly looked into, the microscopic examination of the sputum more thoroughly resorted to and the physical signs specially studied. Particular attention should be paid to the expiratory sound, since a diminished and weakened murmur, with prolonged and high-pitched expiratory sound, is the earliest change to be recognized. He thinks the x-rays are likely to be a valuable aid in the early diagnosis, though he has himself as yet been unable to anticipate the results of auscultation by their aid.

64.—See abstract in THE JOURNAL, XXXV., p. 1491.

65.—Ibid.

67.—Ibid., p. 1415.

73. **Surgery of the Spleen.**—The conditions under which splenic surgery has been tried are enumerated; the operation itself is not a new one. In malarial enlargement numerous operations have been made and the mortality is diminishing. Splenic anemia is treated at some length and a successful case of splenectomy for its relief reported. In splenic leukemia the operation has been almost invariably fatal. Chronic enlargement in infants usually yields without operation. In Banti's disease the mortality is not excessive and surgery seems to afford relief. A number of other conditions, such as abscess, sarcoma, etc., are mentioned, and the operation has a much wider range than might be generally supposed. The reduction in the mortality is largely due to judicious selection of cases. The size of the spleen is less a contraindication than the adhesions it forms. The operation is only distinctly contraindicated in such grave organic lesions as leukemia, cirrhosis of the liver, and amyloid disease. In other affections its merits remain to be tested. The after results are not constant, as a rule, except for the reduction of hemoglobin and red corpuscles and the increase of white corpuscles, and these are only temporary and do not debar the patient from complete restoration to health after splenectomy. A case is reported, besides the one mentioned, where sarcoma of the spleen resulted in death, and one of splenic leukemia with recovery, reported in full detail, one of rupture and one of splenoplexy.

74. **Intestinal Perforation in Typhoid.**—Cushing notices the hopeful feeling in regard to operation for this condition, which exists in this country as compared with Europe, and thinks that 37 cases of actual recoveries after perforation is a cause for congratulation, no matter what the number of failures may have been. Up to the present time 12 cases in Osler's clinic have been operated on, 5 have recovered, and some of the others would have been saved had they been operated on earlier, and had exploratory operation been considered justifiable, as is now the case. It is now a custom there to keep the operating-room ready for immediate use when there is a suspicious case of typhoid in the wards, and most careful watching is kept over all typhoid patients. These, he thinks, will be the occasion of saving 50 to 60 per cent. of the cases of typhoid perforation in the future. Of the 12 cases, all but 3 have been previously reported; one of the 3 is here given.

75.—**Spinal Accessory Paralysis.**—Post-operative or traumatic paralysis of this nerve is treated by Bailey, and a case reported which is of interest as bearing on the question of the nerve supply of the sternomastoid and trapezius muscle. He reviews other cases, and comes to the conclusion that there is more or less variation in this nerve supply. While the sterno-mastoid seems to have its innervation from the accessorius, the trapezoid may be supplied also by some of the cervical nerves. He takes the variation to be as follows: "The spinal center situated between the first and fifth cervical segments of the cord is fixed and constant. As a general rule, the cells of this center send their axones to the trapezius through both the spinal accessory and the cervical nerves. But sometimes there is a variation from this arrangement, in that all the axones pass to the muscle in the spinal accessory, leaving the cervical nerves without function, as far as the trapezius is concerned. Under these circumstances, the motor impulses reach the trapezius exclusively through the spinal accessory, and section of it consequently means total palsy."

77. **Colostomy for Chronic Dysentery.**—The method of treatment advocated for chronic cases of amebic dysentery failing to respond to medical treatment, by Murray, is the production of an artificial anus early in the disease. He would recommend this if after four months of medical treatment the dysentery is not cured. Setting the colon at rest is the only reliable method. He would leave the artificial anus open for a long time, and it should not be closed until it is certain that the ulcer has healed. This can be ascertained by the long rectal tube of Kelly. This method is not of recent date, but has been carried out successfully for several years, in cases of ulceration of the sigmoid and rectum, and by English surgeons in membranous colitis, but it has not been generally put in practice in case of chronic dysentery. He reports a case.

78.—**Tendon Surgery.**—The utility of tendon surgery is pointed out by Coolidge, who emphasizes the necessity of special study of the muscles involved and transplanting or ligating living tendon to replace the paralyzed ones if it can be done. The important points to be considered are: 1. The time of operation, which should not be until the reparative process, after the attack of infantile paralysis, has reached its limit. 2. The amount of strength of muscle to be grafted as compared with the work it will be called upon to do. 3. The location of the grafting. 4 .The method of joining the tendon together. 5. The choice of material: the chromicized catgut with a life of four to six weeks ought to suffice. 6. The post-operative treatment should be at least four weeks in the plaster bandage, then massage and passive movement, usually with some appliance to keep the foot in its proper position, for a couple of months more. The use of tenotomy in spastic cerebral paralysis is also mentioned, and cases reported.

79.—**Appendicitis.**—Brewer reports cases illustrating the errors of diagnosis: In 2 the symptoms were found to be due to renal calculi, in 4 to disease of the uterine appendages, in 1 to sarcoma of the ileum, in 1 to cholecystitis, in 1 to suppurative pancreatitis, and in 2 to general sepsis. The cases are reported in detail.

80.—**Complications of Appendicitis.**—The complications mentioned by Meyer are thrombosis of the femoral veins, of which he reports two cases and discusses the cause. He is inclined to believe in the infectious origin of this condition, though the mechanical theory as brought out by Lennander can not be lost sight of. Another complication is intestinal obstruction occurring sometimes after operation for acute perforative peritonitis. In the first case reported the cause of the obstruction was concluded to be abscess perforation into the descending colon, upon the occurrence of which a coil of the small intestine, which had been under great tension during the full expansion of the abscess, became kinked on its sudden withdrawal, and thus formed the cause of obstruction. The second was obstruction from a minute band passing from the cecum over the small intestine to the root of the latter's mesentery, which was successfully relieved.

83. **Paresis and Cerebral Syphilis.**—Hurd holds that there is a difference between true paresis and syphilitic pseudo paresis, and quotes Meckel's table of points of differential diagnosis. One of the strongest points, he maintains, is the different results of specific treatment in cases of syphilitic history and with lesions apart from cerebral. He does not fully accept the dictum of "no syphilis, no general paralysis," though admitting the predominance of syphilitic antecedents. He calls attention to a clinical manifestation of the paresis, which he thinks is quite rare, that is the sudden and acute exacerbation after a more or less prolonged prodromal period, with symptoms of low-grade cerebral inflammation, and holds it is probable that there is here a true localized inflammation of the brain substance distinct from motor tracts and the basal ganglia. Another point that he especially notices is the influence of a traumatism or an ordinary attack of insanity in the induction of paresis.

90.—This article has appeared elsewhere. See THE JOURNAL of May 4, ¶ 32, p. 1279.

94. **Tuberculin Treatment.**—Denison has experimented with Tuberculin treatment in a large number of cases, with Kleb's tuberculin, and antiphthisin, Mumford's asses' serum, Fisch's antiphthisis serum, T. R., Hirschfelder's oxytuberculin, von Ruck's tuberculin and his watery extract; he tabulates the results. The best results were obtained with the watery extract. Out of 45 cases thus treated, 28, or 62 per cent., are living in apparent immunity, 40 of these apparently cured, 49 per cent. much improved, and only 11 per cent. retrograded. This method of treatment, however, covers a shorter period than the others, which perhaps should be considered in the estimation.

107. **Meddlesome Midwifery.**—Webster protests against the use of antiseptic douches which are unnecessary in the absence of any local or chronic infection or venereal disease of the vulva, vagina and cervix, though in such cases vigorous use of an antiseptic may be necessary. He reviews the literature of the normal and pathologic bacteriology of the vaginal contents at considerable length, as supporting his view that prophylactic douching in the majority of cases is unnecessary. Contamination is sometimes produced by unnecessary vaginal examinations by the physician or nurse, and he insists on the importance of cleanliness and believes that boiled rubber gloves should always be used. The over-use of the forceps is also deprecated, and he gives a tabulated statement of the percentage of cases in which these are used in the leading European clinics.

109. **Cardiac Neuroses.**—The anatomic and physiologic data, as far as their bearing on the production of these conditions is concerned, are noticed by Barker. He makes the suggestion that there is much to be hoped for from an analysis of irregularities based upon modern physiologic and pharmacologic research. The most important feature of such analysis at present is in the emphasis laid upon the importance of the heart muscle itself. He thinks it would be well to be chary in the future use of the term "cardiac neurosis" until the dynamics of the processes concerned are better understood, and suggests grouping them simply under the term "disturbances of cardiac motility."

111. **Gastric Ulcer.**—Andrews reviews the methods and indications of surgical interference in case of gastric ulcer, and offers the following conclusions: "1. Gastric ulcer is a surgical disease. 2. Perforating ulcer should be treated by laparotomy as early as possible. 3. Bleeding gastric ulcer should be treated by operation after resisting medical treatment. 4. Gastric ulcers produce, and are also caused, by pyloric obstruction, and this calls for operation. Many obscure and obstinate stomach troubles are caused by this cicatricial obstruction, and can be cured very safely by surgical intervention."

112. **Gastric Ulcer.**—Herrick describes in detail the method and technique of the rest and rectal feeding method of gastric ulcer, which he thinks offers the most favorable conditions to aid the natural tendency of the lesion to heal, and should receive more attention in text-books and other medical writings. It consists in putting the patient to bed under the care of a trained nurse, emptying and cleansing the bowels, allowing no food to be given at first, except possibly water in small amounts, giving a cleansing enema high in the rectum at regular intervals of four hours. As the pain, tenderness and vomiting decreases or ceases, the rectal feeding is gradually stopped, and feeding by the mouth with a specially prepared diet substituted. The patient is not allowed to get out of bed until rectal feeding has been entirely stopped and food been taken alone by the mouth for several days, and resuming of activity should be gradual. The whole treatment may last for two to six weeks at least, and possibly longer.

113. **Girlhood.**—The points made by Newman are the importance of the proper physical training of girls during the developmental period of puberty, and the prevention of lack of development of the cervix and uterus, which is a serious handicap to their future sexual life, and possibly may result in serious and even fatal conditions after marriage. For this condition of undeveloped cervix he suggests dilatation under anesthesia, supplemented by plastic work to restore the cervix and maintain a proper lumen, as better than subjecting the patient to a course of local treatment in the gynecologic chair.

114. **The Skull and its Contents.**—Earles's paper calls attention to the importance of dural and sclerotic conditions in the cortex following injuries, as being responsible for many epileptic seizures and other troubles, and he advises the uses of the trephine or chisel in every case of severe injury to the head, as evidenced by the symptoms and degree of force received. Careful examination of the soft parts and immediate repair of the injuries should be done as soon after the injury as the circumstances will permit, to avoid sclerosis. When this has been thoroughly established, the sclerosed area should be thoroughly excised and care be taken that the offending area is the one removed.

123. **Alcohol and Tobacco Amblyopia in Cuba.**—Finlay finds that both Cubans and Spaniards in Cuba are far from being immune to alcohol and tobacco amblyopia, and presents 92 cases, which he has met with in a total of 4300; 5 cases of purely alcohol, 31 of tobacco, and 56 from mixed alcohol and tobacco amblyopia. The cases are given in a tabulated form.

126. **Myxosarcoma of the Optic Nerve.**—After reporting a case in which a myxosarcoma was removed from the posterior orbit, surrounding the optic nerve, with microscopical examinations, Axenfeld and Busch call attention to the noteworthy features, which are: 1. The periodic variation of the exophthalmus, with accompanying fever. 2. The almost perfect acuteness of vision and complete field on the day of operation after the exophthalmus had lasted eight months and a considerable tumor of the nerve had developed. 3. The extirpation of the tumor by Kronlein's method, with permanent preservation of the ball. 4. The extensive improvement of the paralysis of the ocular muscles after the operation. 5. The condition and distribution of the medullated fibers in the optic nerve. 6. The existence of hyaline cartilage in the nerve.

127.—**Symblepharon Operation.**—The difficulty of making a permanent retrotarsal fold is considerable in all the symblepharon operations hitherto practiced. From a study of the anatomy, Wolff concluded that the tendinous expansion of the superior rectus, which lies just beneath the conjunctiva, is the natural insertion of the upper conjunctival arch, and might serve as the desired fixed point of attachment for the new-formed upper retrotarsal fold. He has recently had the opportunity to give this operation a trial and reports the case. In future cases, he says, he will do the operation in the following manner: After separating the adhesions until the upper lid can be doubly everted, a horizontal incision will be made in the expansion of the rectus, where the retrotarsal fold should lie. Then, in order to prevent excessive swelling, the lid will be replaced, and perhaps tampons be introduced to check the hemorrhage. After dissecting up the flaps the lid will be everted, so that the flaps may be sutured to the expansion of the rectus in the manner described. It would seem better to cover the tarsal wound also, so as to prevent later a growing over it of the transplanted flap and to avoid the checking of the movements of the upper lid. The advantages of the method lie in the fact that all the available anatomical and pathological relations are taken into consideration: 1. The transplanted flap is attached to the fornix as a natural point. 2. From this it follows that the flap is capable of following all the changes of position of the lid with respect to the eyeball. 3. The transplanted flap is, through this fixation, better adapted to its surroundings and to its base, and therefore more readily becomes attached. 4. Later the expansion of the rectus exercises a constant traction on the new-formed fornix in the direction of the depth of the orbit, and thus prevents the shrinking that often occurs later.

128. **Changes in the Fundus in Pregnancy.**—From a study of 124 gravid women, ranging from the fourth month on, about one-half of them in the tenth month, Bosse concludes that "in a large number of pregnant women there are changes in the fundus, located at the optic disc, and consisting in cloudiness and swelling due to venous stasis and transudation. These neuritic changes are innocent in that functional disturbances of the eye do not occur, or at least are not subjectively recognized, and that they appear soon after labor, without distinction as to whether it is the first pregnancy or a later one."

129. **Nutrition of the Cornea.**—Ulrich experimented on transmission of the fluids through the endothelium on Descemet's membrane, which he thinks does not check the entrance of the aqueous humor into the cornea, but only limits it. He uses ferrocyanid of potassium in his experiments, and he finds that a small amount of aqueous humor thus entering is carried off toward the conjunctiva, thus preventing opacity and swelling. He also made experiments to see the effect of scar tissue, which seemed to show that it is less capable of imbibition than the normal corneal tissue, and that perhaps the lymph circulation offers certain hindrances.

British Medical Journal, May 11.

Experiments upon the New Specific Test for Blood. GEORGE H. NUTTALL and E. M. DINKELSPIEL.—The recent discovery of specific precipitins that act on various bacterial products—milk, peptone, eggs, albumin and different kinds of blood—has led the authors to undertake the investigation, of which the present paper gives an abstract. They injected rabbits intraperitoneally with horse, dog, ox, sheep, and human serum, and were able to observe the formation of specific precipitins in their blood, the antiserums from these animals being tried on twenty-four different bloods with uniformly negative results, excepting a slight action exerted by the antiserum for human blood on the blood of two species of monkey, where a slight reaction was obtained not at all comparable in intensity to that shown on the addition of the antiserum to human blood. A slight cloudiness was produced by the antiserums for ox blood when added to sheep's serum, and *vice versa*. Some animals already gave an effective serum after the third injection. Bloods which had been dried for two months and preserved at room temperature in the dark or daylight, or in the dark at 37 C., and also such as had been exposed for a week to sunlight, as well as serum from a blister, the result of a burn, all gave positive reaction when tested for their particular antiserum. Some human blood which had undergone putrefaction for two months, when diluted 1 to 100 with normal salt solution, gave a marked reaction with the antiserum for human blood, which it did not do with other blood serums. A rabbit that was treated with some old antidiphtherial horse serum preserved with tricresol in a corked bottle for two years and seven months yielded a specific precipitin for horses' serum. Positive results were also obtained by treating a rabbit with a pleuritic fluid which had been kept in the laboratory for from five to six months and preserved by the addition of chloroform. A slight but distinct reaction was obtained with human nasal and lachrymal secretion. Dilutions of human blood—1 to 100—mixed with an equal volume of dilutions of the blood of ox, sheep, dog and horse and tested for human blood, all gave a positive reaction, and *vice versa*. The control experiments with normal rabbits' serum, as also with non-homologous antiserums, gave negative results. These investigations confirm and extend the observations of others with regard to the formation of specific precipitins in the blood serum of animals treated with various serums. The authors, therefore, conclude that these precipitins are specific, although they may produce a slight reaction with the serums of allied animals. The substance which brings about the formation of precipitins, and the precipitin itself, are remarkably resistant. This new test can be applied to blood which has been mixed with that of another animal, and the authors claim that we have in this test the most delicate means thus far discovered for detecting and differentiating bloods, and trust it will be put to forensic use.

The Lancet, May 11.

The Importance of the Teaching of Insanity to the Medical Student and Practitioner in Relation to the Prevention of Insanity. ROBERT JONES.—The responsibility of the doctor in cases of insanity is first alluded to, especially as regards certifying cases, and Jones notices the needs of special knowledge in this regard. The doctor is, moreover, a consultant in regard to engagements, marriages, civil and testimonial capacity, etc., where such knowledge is essential, also in cases of criminal responsibility, and he should have some knowledge also of the subject of anthropology and the signs of degeneracy. The severe mental symptoms arising in the course of bodily disease may also call into play his best efforts. Another of the chief reasons why the medical student should be made familiar with insanity is that it is best treated in its early stages, hence the importance of its early recognition. We are probably on the threshold of important discoveries in regard to this matter, and the need of research is emphasized. The student should be conversant with neurologic methods, especially in histology, should know the changes in the normal secretions, should be familiar with the use of physiologic instruments, blood examinations, etc. A knowledge of psychology or mental physiology is also urged, and the different forms of insanity should be described in a systematic course of lectures, illustrated by actual cases in hospitals and asylums. Jones advocates the issuance of a diploma in mental medicine similar in scope to that in public health, and requiring it to be obtained by all who wish to be medical officers to asylums and hospitals of the insane and those attached to licensed houses for their case. Finally, he would have every public asylum in the country a school for a post-graduate course in mental diseases.

Mental Fatigue in School Children. JOSEPH BELLEI.—The author examined 320 boys of the average age of 11 years, 4½ months, and 140 girls of the average age of 11 years and 8 months, 460 children altogether, by the methods of writing from dictation at various periods during the school hours to test the effect of school fatigue. The conclusions he arrives at are as follows: 1. No conclusion can be drawn as to the influence of single subjects of teaching. 2. The first hour of lessons is a useful mental exercise, because the children are able during that time to overcome the state of inattention in

which they were at the time of coming to school. 3. The morning lessons do not produce great mental fatigue. 4. The midday rest is of great use to the children because it does not destroy the good effects of the mental exercise in the morning and enables them to do work of better quality than that which they produce after a long rest, as one observes at the beginning of the morning lessons. 5. Though immediately after the midday rest the children are in the best condition of mind, an hour or so of application in the afternoon is sufficient to produce such a mental fatigue as to lead, at the end of the afternoon lesson, to the worst work of the day. Therefore, if the morning application does not fatigue, it consumes the mental energy of the children in such a manner that they can not undertake light work in the afternoon without falling into great mental fatigue.

The Practitioner, May.

Composition and Action of Orchitic Extract. WALTER E. DIXON.—The author first notices the historic interest of this extract, showing that it was used by the ancient Romans and was employed up to the end of the seventeenth century, from which time it was dropped until Brown-Séquard revived it. The opposing views held by various persons as to its effects are noted, and he remarks that a very slight glance at the literature shows that tests have been made under widely differing conditions. Some observers use the dried, others the fresh, organs, some sterilize in dubious ways, and some administer the extract by the mouth. The amounts used also vary widely. These should be considered in estimating the value of the different opinions. Brown-Séquard and his immediate followers insisted on the use of the fresh extract, and that it should be injected practically unaltered. It is not fair to condemn their views from experiments performed in altogether different ways. The composition of orchitic extract is noted. It contains a large number of proteids, almost entirely nucleoproteids, also a number of extractives, among which is spermin with others in equal quantity, and probably, at least, as important. Orchitic extract has a decided action on animals, whether injected subcutaneously, or directly into the circulation, and the question arises which of the constituents is the active one. Dixon considers the theory of Pochl that the spermin is especially active and an intra-organic ferment of oxidation not confirmed by the facts. The nucleoproteid is discussed at length, and the author finds that it has a decided action in producing hypoleucocytosis in rabbits. The diminution in the number of leucocytes is mainly at the expense of the polynuclear variety, the lymphocytes being least affected. It also produces a profound alteration in the appearance of the corpuscles; they have an illy-defined contour and show fewer granules; their nuclei are markedly swollen and stain more faintly with methylene blue. When given by the mouth, however, it appears that an immediate hyper-leucocytosis is produced and the excretion of P_2O_5 is increased, the reverse of which appears to be the case with its injection. When injected directly into the circulation orchitic nucleoproteid has an effect upon both the heart and peripheral vessels. The heart is slow, the blood pressure falls and the peripheral vessels dilate; occasionally there is an initial short constriction. The extracts of epididymis and vesiculæ seminales are similar to the extracts of testis, but the effect on the heart is less, while the vasodilatation is greater. Clinical experiments with orchitic extracts are not numerous, but Pregl has found, from the use of ergographic experiments, that its injection leads to increased muscular efficiency, and Zoth has obtained similar results. Henocque found that Brown-Séquard's injections produced a permanent increase in the hemoglobin in phthisis, and, therefore, concluded that they had a beneficial effect on the blood. There is yet much to be learned concerning the action of orchitic extract. Its active constituent is not detected, but it is probable that experiments on eunuchs would lead to valuable results. Orchitic injections administered as suggested by Brown-Séquard have a powerful influence on metabolism, especially showing itself by changes in the urine, in the leucocytes and in the blood pressure.

The Ovary as an Organ of Internal Secretion. WALTER E. DIXON.—The effect of ovarian extract is also studied by Dixon, who notices the effect of castration, its influence on mammary secretion in animals, all indicating the existence of an internal secretion, and the fact that any portion of the ovary being left in the system, no matter where, in the living condition, prevents the effect of their ablation is still further evidence. The administration of ovarian extract in menstrual disorders and on women with induced climacteric as a result of double ovariotomy has been tried in many cases, and on the whole with beneficial results. He sums up as follows: 1. The presence in the body of ovarian tissue, however small in amount, is sufficient to prevent the distressing symptoms which frequently arise after complete double ovariotomy. It does not appear to matter in what position in the body the portion of ovary remains, and even a transplanted ovary is sufficient to prevent the untoward consequences. 2. The administration of ovarian tissue by the mouth exerts a beneficial effect in patients in whom menstruation has ceased in consequence of disease or complete ovariotomy, and many physicians advocate its use during the menopause. 3. Ovariotomy has a distinct effect on metabolism, as shown by the diminution in gaseous metabolism, the increase in body weight due to deposition of subcutaneous fat, and the diminished excretion of P_2O_5 in the urine. In conclusion, it may be asserted that the ovaries exert a decided influence over the organism as a whole, and all evidence is strongly in favor of the theory that this influence is the result of internal secretion which favors katabolic changes. The secretion may be eliminated either as the result of disease or double ovariotomy, when the well-known series of changes characteristic of the menopause are developed. Castration, therefore, both in the male and female, deprives the organism of a stimulant of oxidation, but no chemical substance has been isolated to which the properties of such an internal secretion can be ascribed. It is probably different, however, in the two sexes.

The Therapeutic Value of Suprarenal Preparations in Addison's Disease. CHARLES R. BOX.—Experiments in the treatment of six cases of Addison's disease by the administration of suprarenal preparations, keeping the patients under daily observation; two of these for a very prolonged period, and observation of two other cases similarly treated, lead Box to the opinion that in these patients it would appear either that: 1. the active substance has not been properly administered; or 2, the requisite material is not present in the suprarenal bodies as at present prepared for administration; or 3, the lack of a certain internal secretion is not the sole or predominant factor in Addison's disease.

Bulletin de la Soc. Med. des Hop. de Paris, May 9.

The Blister Test. H. ROGER AND O. JOSUÉ.—The serum of a blister contains a number of cells in suspension. In health the polynuclear eosinophiles predominate, while they are scanty or entirely absent in the case of infectious diseases, although they reappear as the organism triumphs over the disease. In chronic tuberculosis the number of polynuclear cells may attain or exceed 90 to 95 per cent. In consumptives the cells seem to be swollen as if dropsical. This appearance of the cells may sometimes reveal a latent, unsuspected tuberculosis. The blister test is a valuable index of the intensity of an infection. It is extremely sensitive; a trifling secondary infection superposed may alter the proportions of the cells in the serum.

Lumbar Puncture for Persistent Headache of Bright's Disease. P. MARIE and LE GENDRE.—Marie reports a case of severe headache in the course of Bright's disease, rebellious to all therapeutic measures. He withdrew 6 c.c. of cerebrospinal fluid by lumbar puncture, and permanently relieved the patient. Le Gendre reports a similar case, the patient a house painter, a victim of lead poisoning, suffering from myosis, cephalalgia and insomnia. The withdrawal of about 13 c.c. of cerebrospinal fluid restored him to comparative health.

Journal de Medecine de Bordeaux, May 5.

Raisins in Urotherapy. P. CARLES.—When the urine is excessively acid Carles counteracts this tendency by administering an acid which becomes transformed in the organism into an alkali, such as potassium bitartrate for instance. The

tartaric acid is consumed and the substance is transformed into potassium carbonate. Being acid, it moderates the gastric acidity rather than stimulates it, while during its transformation into an alkali, it dissolves and carries away with it the uric acid generated in the organism, and re-establishes the balance of the urinary acidity as it reaches the bladder. The potassium bitartrate is more readily soluble when it is in combination with various organic matters, as in grapes. The sugars in the grape have also a diuretic effect. When grapes are in season they are preferable, but during the remainder of the year Carles finds that Malaga raisins answer the same purpose and he prescribes 100 gm. of raisins a day, to be eaten at dessert. Analysis shows that 100 gm. of raisins contain half their weight of sugar and about 2 per cent. of potassium bitartrate or other organic acid salts. Combustion of this amount furnishes 73 cg. of potassium carbonate or 50 cg. of alkaline potassium, and this potassium is able in turn to transform 90 cg. of free uric acid into a neutral, soluble potassium urate. This is about the amount excreted in twenty-four hours in health. Five patients with urinary acidity three times the normal, were restored to normal in twenty-four hours and the total amount of uric acid was diminished, by the simple process of eating 100 gm. of raisins during the day.

Progres Medical (Paris), April 27.

Idiocy and Diplegia in Two Brothers; Atrophy of the Cerebellum. BOURNEVILLE.—Two brothers were received at Bicêtre, aged 10 and 13, both presenting all the cerebrospinal symptoms of infantile cerebral spasmodic diplegia—both complete idiots. The parents were healthy, free from alcoholic or syphilitic taint, and their other five children were healthy. One of the idiots died and the cerebellum was found in a pronounced condition of atrophy. The pyramidal tracts in the spinal cord also showed symptoms of degeneration. He had had measles at 18 months. It is impossible to tell whether the other brother will show the same atrophy of the cerebellum at his autopsy. Thomas was able to find only 28 cases of bilateral atrophy of the cerebellum, mostly post-mortem discoveries in adults. Only three cases are on record that date from childhood. Bourneville is inclined to doubt whether this atrophy of the cerebellum is sufficient to explain the entire clinical picture, which is duplicated in the brother.

May 4.

Transmission of Scarlet Fever to Cats. E. RAPIN.—Some children with scarlet fever had a young kitten for a playmate and the latter soon exhibited all the symptoms of scarlet fever, including the period of desquamation and shedding its fur, which lasted for several weeks. Another kitten brought to the children was affected in the same way and succumbed. A similar experience in another family has convinced Rapin that very young kittens are susceptible to scarlet fever, while older animals probably escape. Behla doubts this transmission of scarlet fever, except for pigs, which are peculiarly predisposed to eruptive diseases. He mentions that a farmer used as bedding for his pigs the straw from mattresses on which four of his children had died from scarlet fever. Two of the pigs soon died from a disease accompanied by a scarlet eruption. Spinola admits that horses are liable to contract scarlet fever, and Schneidemuehl suggests that the disease described by Petrowski among sheep and goats may prove to be scarlet fever.

Consanguinuity in the Etiology of the Chronic Nervous Diseases of Children. BOURNEVILLE.—All the cases of consanguineous marriages in the parentage of 2784 epileptics, idiots, hysterics or imbeciles that have been treated at the Bicêtre hospital since 1879 have been carefully recorded. Bourneville found among them a total of 91 cases or 3.23 per cent., in which the parents were blood relations. In 49 they were cousins, in 24 second cousins, in 3, uncle and niece. In the others the relationship was still more distant. The 91 cases included 25 of idiopathic epilepsy, 21 of symptomatic epilepsy and 16 imbeciles. The proportion of 3.23 per cent. is so small thaat he considers consanguinity a very insignificant factor in the genesis of the chronic nervous diseases of childhood. He claims that marriage between cousins of vigorous constitution, free from hereditary taint, will result in healthy offspring. If one or both of the parents are hereditarily diseased, the children will suffer, not from the consanguinity, but from the inherited predisposition.

Semaine Medicale (Paris), May 8.

The Heart in Chronic Articular Rheumatism. E. BARIÉ.—Twenty-five case-reports of a cardiac affection complicating chronic rheumatism, including several personal observations, are reviewed by Barié. Pericarditis and endocarditis occur most frequently, with or without hypertrophy of the heart, fatty degeneration of the myocardium or cardiosclerosis. All kinds of pericarditis have been noted, with or without effusion. In the former case it is usually hemorrhagic. The endocarditis involved the mitral valve in four cases and the aortic in seven, but usually it causes an aortic insufficiency. These complications have been observed at all ages; children are not exempt. Barié attributes chronic, deforming nodular rheumatism to two distinct factors. The articular and the muscular lesions of chronic rheumatism may be connected with alterations in the central and peripheral nervous system, similar to the trophic lesions noted in ataxia, general paralysis and certain affections of the spinal cord. This conception has not been sustained by pathological anatomy as yet, but there is no doubt that chronic nodular rheumatism belongs to the group of nutritional diseases, which includes gout and diabetes. This assumption is the more plausible as all three have a tendency to be complicated by cardiac affections. Gout is frequently accompanied by chronic degeneration of the myocardium or valvular endocarditis, while Saundby states that the heart is affected in 60 per cent. of all cases of diabetes. The cardiac affection is probably due to the extension of the dyscrasic process peculiar to each of these diseases, to the cardio-vascular apparatus. The dyscrasic process of gout and diabetes are known, but we are still in the dark as regards that of chronic rheumatism.

Beitraege z. Klinischen Chirurgie (Tubingen), April.

Surgery of Tubercular Kidney. O. SIMON.—This article summarizes the results of Czerny's experiences with thirty-five cases of tuberculosis of the kidney during the last twenty-one years. If unilateral, it should be operated on at once, he states. The only exception is when the affection is merely one manifestation of miliary tuberculosis or when extreme cachexia or advanced general infection forbid intervention. Nephrotomy is a palliative operation, but may be useful as preliminary to secondary nephrectomy. Primary nephrectomy is the operation to be preferred, but a primary nephrotomy, with extirpation of the organ later, may be advisable in case the patient is very weak or the diagnosis or the condition of the other kidney is still dubious. Primary extirpation of the ureter is rarely necessary. Seventeen, or 48.5 per cent., of his 35 patients are still living, and 13, or 37.1 per cent., are in perfect health. Five have passed through one or several pregnancies since. There have been no disturbances in the urinary tract in 18, and 24 have been relieved for more than three years of all or most of their troubles. Internal treatment had been tried and failed in all before surgical intervention was resorted to. One patient died from hemorrhage and shock in a secondary nephrectomy, deferred too long, until extensive adhesions had formed. Two other deaths occurred after primary nephrectomy, both from sepsis.

Injury of the Femoral Vein at Poupart's Ligament. F. FRAENKEL.—After a traumatism in the vicinity of Poupart's ligament that suggests a possible injury of a large vessel, the region should be carefully investigated, even in the absence of indications of much hemorrhage. In case of injury of the femoral vein the wound should be sutured, retaining the lumen intact. If the edges of the wound are crushed, forceps can be applied laterally. These procedures are applicable only in aseptic conditions. Otherwise, resection of the vein between two ligatures is the only resource. Quite a large portion of the vein can be resected; the openings of the afferent veins can be disregarded. The rapid establishment of collateral circulation after ligature or resection of the vein is best promoted by removing the extravasated blood around the vein.

stimulating the action of the heart and favoring the reflux of venous blood from the extremities by raising the foot of the bed. In the thirteen published cases of suture of the femoral vein, the injury occurred during an operation in all but one, and also in one of the two personal cases related by Fraenkel. The others were stab wounds.

Ligature of the Carotid Artery in Resections of the Upper Jaw. C. SCHLATTER.—The ligature of the external carotid artery should be permanent when done as a measure preliminary to resection of the upper jaw. Hemorrhage and the danger of aspiration of blood are thereby much reduced. In exceptional cases the common carotid may require ligation also, but temporary constriction is better under these circumstances than a permanent ligature. The details of three personal cases are given.

Centralblatt f. Bakteriologie (Jena), March 2.

Capillary Double Lamp for Formaldehyd Disinfection. PIORKOWSKI.—A long-necked jar is inverted on a porous plate over a spirit lamp, the whole closed, except the open top of the jar above. The jar is filled with a 40 per cent. solution of formaldehyd. The capillary attraction of the porous plate aspirates the fluid out of the jar as fast as the heat of the lamp evaporates it on the plate. The gas thus generated escapes through the jar into the room and sterilizes superficially even spore-material with 150 c.c. of the fluid to 10 cubic meters of space. Ordinary microbes are destroyed with 50 c.c.

Centralblatt f. Gynaekologie (Leipsic), April.

Removal of Placenta by External Manipulations. W. ZANGEMEISTER.—During the pauses between the labor pains, Zangemeister compresses the uterus with each finger in turn, applied from the sides, front or rear, kneading the organ as it were, and ceasing as the pains recur. This massage assists materially in detaching the placenta, and should always be tried before resorting to manual extraction.

Centralblatt f. Harn u. Sexualorgane (Berlin), April.

Diagnosis of Prostatitis from the "Swimming Drops." F. SCHLAGINTWEIT.—After massage of the prostate, the drops of secretion that are expelled float on the surface if caught in a glass of water, or hang suspended like long bags from the portion floating on the surface. Seminal secretion becomes opaque as soon as it touches the water. Pus sinks in yellowish flakes to the bottom. The "swimming drops" thus enable pus, prostatic secretion and healthy seminal secretion to be macroscopically differentiated.

Centralblatt f. Innere Medicin (Leipsic), April 6.

Guaiacol Treatment of Acute Gonorrheal Epididymitis. B. GOLDBERG.—Lenz has reported fifty cases and Goldberg has an experience of twenty-five cases of acute gonorrheal epididymitis during the last four years treated by rubbing into the parts a salve made of 5 gm. of guaiacol to 10 gm. each of lanolin and resorbin, every twelve hours, using up the entire amount in three or four days, covering air tight after each application. The patient takes 3 to 4 gm. of salol during the day at the same time. The general health and the local conditions remarkably improved and no inconveniences were noted in any case, even in patients with much prostration, cardiac insufficiency or polyarthritis. The results are more favorable the earlier the treatment is commenced.

April 13.

Sensitive Test for Mercury in the Urine. B. BARDACH.—About 8 gm. of finely pulverized commercial egg albumin are stirred into 250 to 1000 c.c. of urine and the urine is rendered acid with a small amount of 30 per cent. acetic acid. The fluid is then boiled fifteen minutes in a water-bath and filtered while hot. Hydrochloric acid—10 c.c.—is then mixed with the filtrate and a spiral of copper wire placed in the jar, which is then kept in boiling water for forty-five minutes. The wire is then rinsed and when dry is placed in a glass tube fused at one end, a few scraps of iodin are added and the tube is heated. A yellowish or reddish ring appears on the glass with 5 mg. of mercury to the 500 c.c. of urine, and even 2.5 mg. are perceptible

Jahrbuch f. Kinderheilkunde (Berlin), April 4.

Angina Lacunaris. B. WESTHEIMER.—Angina lacunaris must be considered an acute, infectious disease and treated and isolated accordingly. The incubation lasts four days. Weakly children display a tendency to frequent recurrences and complications. Even healthy children are exposed to danger of the latter. Ice pills and external applications of ice with insufflations of boric acid and saccharin, a fluid, cold diet and rest in bed, will usually prevent complications. Children exposed should not return to school for five days.

Pathology of Infantile Myxidiocy, Sporadic Cretinism or Infantile Myxedema. F. SIEGERT.—The thyroid gland is absent in case of congenital myxidiocy. The alterations in the skeleton are specific and the reverse of those observed in rhachitis, which are typical premature calcification, while in myxidiocy the ossification is defective. If the tendency is arrested by thyroid treatment, rapid growth and tardy ossification follow. Signs of myxidiocy are weakness of muscles, gaping fontanelles, absence of the thyroid gland, changes in the hair and an unusually small number of blood corpuscles, with a proportionate lack of hemoglobin. Acquired myxidiocy may develop after rhachitis. Thyroid treatment and a vegetable diet improve every case and cure recent ones. Great prudence is necessary in the administration of the thyroid extract. Becker has reported that a child 2½ years old took ninety tablets, of .3 each, at one time, with no disturbances. Others have reported deaths after ten days of moderate treatment. Siegert himself lost a patient 18 months old who had taken a tabloid of .324 after gradually increasing from quarter to half a tablet. The thymus was found very large and studded with innumerable small hemorrhages. He warns against thyroid treatment in rhachitis, as the status thymicus is frequent, and large doses may soften the bones.

Monatshefte f. Prakt. Dermatologie (Hamburg), March 15.

Local Treatment of Carcinoma. P. G. UNNA.—Certain cases of rodent ulcer, etc., can be arrested in the early stages by applying a resorcin plaster. If some of the nodules resist this treatment, Unna applied the thermocautery, followed by resorcin in bulk or in an alcoholic solution. If the neoplasm is already of deep growth, he cauterizes at once or induces ulceration with a plaster composed of 5 gm. each of arsenious acid and extract cannabis indica and 20 gm. salicylic acid to each meter of plaster. This combination has the same elective action on cutaneous carcinoma as his simple salicylic-cannabis plaster on lupus tissue. The neoplastic tissue rapidly ulcerates under it, while the sound skin remains intact much longer. He then heals the lesion under a resorcin plaster or a resorcin-benzoic acid evaporating bandage.

Muenchener Medicinische Wochenschrift, May 7.

Diagnosis of Tumors of the Frontal Brain. HOENIGER.—When a cerebral tumor begins with psychic disturbances, or when they appear in the course of its development, the assumption of a frontal tumor is justified. The psychic manifestations are frequently a loquacity and tendency to joke on all subjects—"Witzelsucht," the Germans call it. Hoeniger ascribes this symptom to an irritation of the motor speech center, which is located in the third left frontal convolution. Patients resemble maniacs in this respect, only that the effect of the tumor is felt in the deadening of the motor excitement. The corresponding region in the right hemisphere has also some action on the speech, but this "Witzelsucht" is much more frequent with tumors on the left side. It is occasionally accompanied by facial paresis. Another symptom is the stumbling gait, which he traces to a weakness of the muscles of the lower portion of the trunk, sometimes spasmodically contracted. He describes three cases in detail, showing the localization of the tumor in the center for the rump muscles, in the middle portion of the first frontal convolution. As the tumor grew and encroached on the tissues, the weakness of these muscles first observed developed into permanent paralysis. In proportion as the frontal tumor develops in these cases, frontal ataxia or contractions of the rump muscles or disturbances in speech become manifest as focal disturbances, and associated with these "neighborhood symptoms" appear,

proceeding from the motor region, or in case the tumor develops toward the base, the symptoms proceed from the basal nerves.

Phototherapy with Ultra-Violet Rays. GOERLT.—The benefits of Finsen's complicated apparatus are obtained with a simple electrode devised by Goerlt, which concentrates the ultra-violet rays for local application on lupus, and can be attached to any electric Roentgen apparatus by adding a 6 cm. Leyden jar. The electrode is a round metal box, in which five aluminum balls are mounted on stems in the outline of an S. The spark follows the balls and never passes to the patient. The box cover has a crystal top, and is fastened with elastic cords to the part in order to expel the blood, as the ultra-violet rays are much more effective in the absence of blood.

Therapie der Gegenwart (Berlin), April.

Tuberculosis of the Larynx. M. SCHMIDT.—Congestion of one vocal cord is very suspicious of tuberculosis. A week of potassium iodid will exclude syphilis. The prognosis is not so grave as was formerly supposed. The laryngeal process may heal even with progressing pulmonary tuberculosis. No sharp, irritating foods or drinks should be allowed, and the patient should be forbidden to use his voice, even in a whisper, but should communicate entirely in writing, until cicatrization has progressed for a few weeks or months. When it is found that the parts do not become congested or swollen from whispering, then the use of the voice can be gradually resumed, and will prove a good exercise for the parts. Schmidt uses a 50 per cent. solution of lactic acid, not oftener than every one or two weeks. If possible he removes all the diseased tissue by an endolaryngeal operation. In advanced cases with much stenosis, tracheotomy is preferable to laryngofissure.

Eucain in Spinal Analgesia.—An abstract of a communication by Jedlicka from Maydl's clinic states that eucain has been used in ninety-three laparotomies or other serious operations, with extremely favorable results. A corresponding amount of the cerebrospinal fluid is withdrawn, which prevents the subsequent headache sometimes noted. Nausea and vomiting may occur during the period of analgesia if the stomach is empty, with possible paresis of the anal sphincter and erections. This stage is followed by a normal period, but three to six hours after the injection, headache and elevation of temperature may be noticed. If the headache is very severe, relief can be obtained by lumbar puncture and withdrawal of a little cerebrospinal fluid.

Therapeutische Monatshefte (Berlin), April.

New Operative Treatment of Flat Foot. F. FRANKE.—A successful case of cure of flat foot is described, in which the operation consisted only of shortening the tendon of the tibialis posticus muscle, under spinal cocainization.

Present Status of the Conception of Gout. H. ROSIN.—The theory that the essence of gout is a retention of uric acid in the organism is now generally discarded. It has been learned that the sources for the production of uric acid are not confined to the nuclein substances, but may be derived from other albuminous elements in the food. There is no proof as yet that the increased amount of uric acid in the blood-serum in gout is due to more extensive destruction of nuclei. It may possibly be due to an increase in the transformations of other albuminoids into uric acid instead of into urea. Researches have shown that in dogs uric acid is decomposed in the liver, kidneys and muscles. Wiener believes that the uric acid is transformed into glycocol to a greater or less amount. The uric acid in the organism is thus disposed of in the same manner as sugar. The latter process is called glycolysis, and Rosin suggests the term urolysis for the former. It is possible that disturbances in this urolysis may be the exclusive cause of the increase in uric acid in gout. Reviewing the progress in the treatment of gout, Rosin observes that the benefits derived from piperazin in the artificial gout of fowls, have not been confirmed in man. Sidonal and quinic acid, however, especially the latter, have been proved to have a powerful dissolving effect on the deposits of uric acid, even in the kidneys, the results in mammals surpassing those obtained in fowls. No more can be expected from them, however, than from antidiabetic diet in diabetes. The essence of the gouty process is not affected.

Wiener Klinische Wochenschrift, May 2.

Iron in Human Milk. J. K. FRIEDJUNG.—A number of tests on nineteen healthy women showed that their milk contained from 3.52 to 7.21 mg. iron to the liter, an average of 5.09 mg. This amount is small but constant, and is evidently important for the proper development of the infant. Unfavorable external conditions, the age of the woman and chronic affections diminish the amount of iron in the milk, and even apparently healthy women whose nurslings do not thrive, are probably deficient in iron. This lack of iron is possibly one of the factors in the less perfect development of bottle-fed babies.

Gazzetta Degli Ospedali (Milan), May 5.

Etiology of Acute Articular Rheumatism. N. ZENDER.—Two patients with an ordinary phlebitis were suddenly attacked by acute rheumatism, articular in one and restricted to the muscles in the other. In the latter case the rheumatism subsided and the patient recovered as several abscesses developed in the muscles involved. The first patient recovered after an extensive eruption of boils.

Anales del Circulo Med. Argentino (Buenos Ayres), xxiv, 1 and 2.

Leprosy in South America. E. R. CONI.—This article was read at the Pan-American Congress held at Santiago in January. It states that there are about 3000 lepers in Brazil, 800 in Argentina, 150 in Paraguay, and 43 in Uruguay, with scattered cases in the more southern countries. Colombia has from 20,000 to 30,000 in a population of 4,000,000. Venezuela has two asylums housing about 300. The congress adopted resolutions to the effect that a committee be appointed by each government to collect data and study the results of systematic and scientific prophylaxis according to the precedents established by Norway. An international committee was also appointed to collect statistics and report at the next congress.

Nordiskt Medicinskt Arkiv (Stockholm), xxxiv, 1.

Conservative Operations on the Kidney in Acute Pyelonephritis. K. G. LENNANDER.—Since 1892 Lennander has operated on five patients exhibiting symptoms of general depression, chills, fever, headache, etc., with no retention, but local pain and tenderness in the hypertrophied kidney with bacteria and pus in the fetid urine. He bisected the kidney in each case and resected the portion containing the miliary abscesses and infiltration. The bacterium coli was found in the resected tissues in every case. The adipose capsule was congested and edematous and the fibrous capsule was detached with remarkable facility. A thick layer of bloody serum was found between the kidney and the capsule in two cases. All the cases were unilateral and the lesions were localized to such an extent that a large portion of the kidney was saved, and resumed its natural functions. All the patients were restored to health except one, in whom the renal lesion was secondary to advanced pulmonary tuberculosis. An incipient tuberculosis of the kidney had probably prepared the soil for the coli infection to develop. Four or five days after the apparently successful resection, hemorrhage from the kidney was followed by general sepsis and death. The other kidney presented evidences of parenchymatous degeneration alone. In his first patient, operated on in 1893, the portion of the kidney involved was about the size of a cherry. The patient was pregnant at the time, has passed through three pregnancies since without disturbance, and is still healthy. The second patient developed symptoms of acute pyelonephritis and miliary abscess-formation as she began to sit up after an abdominal hysterectomy for suspected carcinoma. The kidney was very low and the ureter had become bent on itself. The streptococcus longus was found in the resected portion of the kidney and in the omentum at the laparotomy. The patient rapidly recovered. The third case was a woman of 46, with a history of cystitis fourteen years before. The cystitis re-

curred after a violent cold, and as it improved under treatment, symptoms of acute pyelonephritis with diarrhea appeared, but no retention. The patient recovered after the kidney had been split and a portion resected, but slight indications of nephritis persisted. Seven months later she passed through a severe attack of pneumonia with acute hemorrhagic nephritis, but rapidly gained her former comparative health. The fifth case was a woman of 40 with an uretero-utero-vaginal fistula from her ninth childbirth, from which the acute pyelonephritis and miliary abscesses developed. She was cured by nephrostomy and resection, supplemented later by an extra-peritoneal uretero-cysto-neostomy. Lennander's experience shows that pyeolonephritis and abscess-formation is frequently unilateral, that a large portion of the kidney can be saved by early diagnosis and operation, and that this portion will resume the natural functions of the organ.

Resection of a Stricture in the Esophagus. E. SANDELIN.—The esophagus was exposed through an incision along the inner margin of the sternomastoid muscle and the inferior thyroid vessels ligated in two places. The traumatic stricture was easily removed and the stumps sutured. The patient was fed at first with nutritive enemata twice a day for four days, then fluid food by the mouth. It oozed through the wound a little at first. In one month the patient was entirely cured, eating and appearing normal. A permanent sound through the mouth or nose for feeding is considered detrimental by Sandelin, as it is liable to induce vomiting and iritate the wound.

Chronic Pneumococcus Phlegmon. I. JUNDELL and F. SVENSSON.—A young woman became suddenly affected with a pseudomembranous, non-diphtheric, sore throat, with symptoms of severe infection. As this subsided it was followed by a lesion in the sternal region resembling Quincke's acute angio-neurotic edema—a chronic, progressive edema or serous phlegmon, finally tending to suppuration in the course of three months. The pneumococcus was derived pure from the serum. The fever was very high at first and the patient continued to have some temperature until the phlegmon healed after evacuation, but the general health did not suffer except during the first two days of the onset.

A Case of False Stenosis of the Pylorus. ISRAEL-ROSENTHAL.—The puzzling symptoms in the case described were explained at the autopsy by the discovery that an ulcer in the upper portion of the lesser curvature had retracted the stomach wall in such a way that the lower portion of the pyloric orifice fitted against it like a valve, as soon as the stomach became distended, closing the lumen completely. When the stomach was not distended the valve opened, and the condition might have been easily overlooked during an operation, as the pylorus was permeable for two fingers as soon as the valve fell away from the upper portion of the orifice. The patient had several attacks of convulsions not long before death, probably an equivalent for the tetany sometimes observed in cases of ectasia of the stomach with hyperchlorhydria —evidently a toxic phenomenon.

Epidemic Cerebrospinal Meningitis in Norway. C. LOOFT.—All the cases of epidemic cerebrospinal meningitis that have come under the observation of the district physicians are reviewed and tabulated. The first cases were reported in 1815. In many instances it was impossible to discover the origin of the disease, which appeared at several points at once and spread without traceable transmission, some times in isolated farms. Exposure to cold or fatigue were sometimes the accidental cause.

Sodium Cacodylate in Tuberculosis. P. DE LANGENHAGEN.—Four of the eight patients were in early stages of tuberculosis and all regained complete health under treatment with sodium cacodylate. Three in advanced stages of tuberculosis were remarkably improved, gaining 12 kilos in five months on an average.

Diffuse Nephritis. J. W. RUNEBERG.—The clinical conception of diffuse nephritis or Bright's disease includes the degenerative as well as the inflammatory forms of acute and chronic generalized affections of the kidneys, but not senile atrophy nor albuminuria without permanent alteration of the organ, nor congested kidney. Diffuse nephritis in all its forms is due to the action of toxic substances, the result of bacterial infection or abnormal metabolism or encroaching from without. These toxic substances induce extensive morbid processes of a compound inflammatory and degenerative nature, principally in the kidneys, but also in the vascular system and heart. Runeberg distinguishes seven clinical varieties: Genuine contracted kidney or granular atrophy; amyloid fatty kidney or amyloid degeneration; simple fatty kidney; nephritis of pregnancy; nephritis induced by a preceding infectious disease; nephritis of the same type as that consecutive to an infectious disease but originating in a cold or trauma, and lastly, toxic nephritis, that is, due directly to toxic substances introduced into the organism. Transitional and combined forms are frequently observed. In differentiating nephritic from non-nephritic albuminuria the chief points are the symptoms in the vassels and heart, and the formed elements in the urine, in addition to the etiology and general course of the affection. Indications of arteriosclerosis and of an endocarditic or myocarditic affection, and the presence of cells and cylinders in the sediment of the urine, speak for an inflammatory process in the kidneys. But these symptoms are not observed in the entirely or predominantly degenerative forms, in which hyalin and finely granular cylinder casts are frequently found in the urine, with remains of degenerated epithelium cells. The cases of granular atrophy frequently simulate digestive disturbances or a nervous affection at first, or the heart symptoms or albuminuric retinitis may be the first to attract the patient's attention. In other cases a severe uremic attack may be the first manifestation of trouble. In all these cases the tense pulse, sclerosed arterial walls, accentuated second aortic sound, loud apex beat and dilatation of the heart and displacement of the apex outward and downward, but especially the increased amount of clear urine at night, and occasional slight albuminuria, suggest the diagnosis of granular atrophy. Sclerosis of the arterial walls and the age are also points in its favor as it usually affects young adults, and also the low specific gravity of the urine. The symptoms of uremic intoxication and of albuminuric retinitis are usually more pronounced than in arteriosclerosis without nephritis. The characteristic symptoms in the vascular apparatus are absent in cases of fatty or amyloid degeneration of the kidney, but this condition is sometimes complicated by granular atrophy, and the differentiation is difficult. The symptoms of hydremic anemia serve to differentiate contracted kidney. The diagnosis of amyloid, fatty kidney is founded on the absence of disturbances in the circulation or heart, the clear, albuminous urine, free from cylinders or formed elements of an inflammatory nature, on the etiology and also on symptoms of amyloid degeneration of other organs, of the spleen in particular. The albuminuria is more constant in case of amyloid degeneration than in the non-nephritic, so-called periodical albuminuria, which disappears at night, and is most pronounced in the morning. The nephritis of pregnancy may lead to a secondary contracted kidney. Indications of blood corpuscles, cylinder casts, and formed elements of an inflammatory nature in the urine in combination with the phenomena in the circulatory apparatus, simplify the diagnosis of nephritis consecutive to a cold or infectious disease.

Queries and Minor Notes.

RED CROSS MEDICAL ASSOCIATION.

GRAND RAPIDS, MICH., May 14, 1901.

To the Editor:—Can you give me any information on "The Red Cross Medical Association?" Is it ethical? Would a physician lower his professional standing by becoming an inspector for such an association? C. B. H.

ANS.—As we understand it the Red Cross Medical Association here referred to is a concern gotten up to exploit the medical profession to their disadvantage, a sort of bureau to furnish cheap medical advice, and therefore not ethical. "Societies for mutual benefit" are specifically not entitled to gratuitous service, nor are such associations entitled to receive medical services at rates that are below what ought to be allowed and are practically gratuitous.

CLIMATES FOR PULMONARY TROUBLES.

NEW HAVEN, PA., May 20, 1901

To the Editor:—Will you give me a list of those states east of the Rocky Mountains where the climate is not especially conducive to pulmonary troubles. In other words, where persons whose lungs are sound, but who have a constitutional tendency to consumption, may live in comparative safety. E. P.

ANS.—The climates most often recommended are those of the Alleghany Mountain regions, the pine woods regions of the Southern States, the Adirondacks, Minnesota, etc. It is impossible, to say, however, just how any given case will do in any climate. Probably, as Knopf says, the best climate for one who fears consumption is the one which permits him to be out doors more and longer at a time than anywhere else. A pure dry air, with some elevation can be found in the regions mentioned, and it is advisable to get these if possible. If a patient can recover or keep well at or near home the better and probably the cure will be more durable, not being dependent on special conditions.

SECRETARIES OF STATE BOARDS.

In the "Queries and Minor Notes," on p. 1359, the question was asked concerning the names of the secretaries of the health boards of certain states. As the inquirer evidently intended to ask the names of the secretaries of the examining boards, these were given, and in some cases they are not the same, as for instance in Michigan, where Dr. B. D. Harison is secretary of a board entirely distinct from the board of health, of which Dr. H. B. Baker is secretary. The answer should have stated that the names given were those of the secretaries of the examining boards whether they were the same as the health boards or not.

New Patents.

Patents of interest to Physicians, May 7 and 14:

673,592. Pharmaceutical instrument. George L. Allen, Bradford, Pa.
673,491. Apparatus for disinfecting, deodorizing, or fumigating. Jean Bardin, Brussels, Belgium.
673,675. Operating table. Wm. F. Bernstein, Philadelphia.
673,598. Vein opener and clamp. Carl B. Dolge, Westport, Conn.
673,769. Composition of matter for poultices, etc. Charles M. Ford, Denver, Colo.
673,827. Atomizer. Charles F. Strohm, Nevada, Mo.
673,630. Pad for medicinal use. Frederick W. Warner, Rochester, N. Y.
34,475. Design, water-bag. Christian W. Meinecke, Jersey City, N. J.
673,872. Support for neck and head. Charlotte von Hillern-Flinsch, Hamburg, Germany.
673,958. Medicine spoon. Charles Langguth, Chicago.
673,916. Splint clamp. Edward M. Lockwood, Phœnixville, Pa.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., May 9 to 15, 1901, inclusive:

William H. Block, captain and assst.-surgeon, Vols., leave of absence granted.

Charles B. Byrne, lieut.-col., deputy surgeon-general, U. S. A., from Fort Sam Houston, Tex., to St. Paul, Minn., as chief surgeon, Department of Dakota.

John Carling, captain and asst.-surgeon, Vols., leave of absence extended.

William O. Cutliffe, captain and asst.-surgeon, Vols., leave of absence granted.

Euclid B. Frick, captain and asst.-surgeon, U. S. A., member of a board at San Juan, P. R., to examine certain persons as to their fitness for appointment as second lieutenants in the Army.

William R. S. George, contract surgeon, member of board at San Juan, P. R., to examine certain persons for appointment as second lieutenants in the Army.

Luther B. Grandy, major and surgeon, Vols., recently appointed and now at Atlanta, Ga., to proceed to San Francisco, Cal., en route for service in the Division of the Philippines.

Harry M. Hallock, captain and asst.-surgeon, U. S. A., leave of absence granted.

Charles F. Mason, captain and asst.-surgeon, U. S. A., from Washington, D. C., to post duty at Fort Sam Houston, Tex.

Elmer A. Scherrer, contract surgeon, from Fort Grant, Ariz., to Denver, Colo., for annulment of contract.

H. Brookman Wilkinson, captain and asst.-surgeon, Vols., recently appointed, leave of absence granted: from Bishopville, S. C., to San Francisco, Cal., en route to Manila, P. I., for duty in the Division of the Philippines.

Navy Changes.

Changes in the Medical Corps of the Navy for the week ended May 18, 1901:

Medical Director J. C. Wise, appointed a member of a Board for the physical examination of candidates for appointment to the Naval Academy.

P. A. Surgeon W. B. Grove, orders appointing him member of examining board at Annapolis, revoked.

Surgeon O. Diehl, detached from the *Indiana*, and ordered to the Philadelphia Navy Yard.

Surgeon C. Biddle, detached from the Philadelphia Navy Yard, and ordered to the *Indiana*.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the fourteen days ended May 16, 1901:

Surgeon H. W. Austin, to proceed to Washington, D. C., for special temporary duty.

Surgeon R. M. Woodward, granted leave of absence for 10 days from May 7.

P. A. Surgeon W. G. Stimpson, to proceed to Coalgate, I. T., for special temporary duty.

Asst.-surgeon Taliaferro Clark, granted thirty days' extension of leave of absence, on account of sickness, from April 21.

Asst.-Surgeon D. E. Robinson, to proceed to Port Townsend (Washington) quarantine station, and report to the medical officer in command for special temporary duty.

Asst.-Surgeon Dunlop Moore, that portion of bureau order of April 18, 1901, directing him to proceed to San Francisco, Cal., revoked.

Hospital Steward L. W. Ryder, granted leave of absence for fifteen days from May 6.

Surgeon John Godfrey, upon being relieved by Surgeon J. J. Kinyoun, to proceed to Wilmington, N. C., and assume command of the service, relieving Surgeon T. B. Perry.

Surgeon Eugene Wasdin, to proceed to Gardner, Ill., for special temporary duty. Bureau order of May 14, directing Surgeon Wasdin to proceed to Gardner, Ill., revoked.

Surgeon T. B. Perry, upon being relieved from duty at Wilmington, N. C., to proceed to Baltimore, Md., and report to medical officer in command for duty and assignment to quarters.

Surgeon R. M. Woodward, granted 10 days' extension of leave of absence.

P. A. Surgeon G. B. Young, granted leave of absence for two months and twenty-two days from May 30.

P. A. Surgeon W. G. Stimpson, to proceed to Guthrie, Okla., for special temporary duty.

P. A. Surgeon J. A. Nydegger, granted leave of absence for one day.

P. A. Surgeon J. B. Greene, granted leave of absence for ten days from May 15.

Asst.-Surgeon Carroll Fox, to proceed to Sitka and Juneau, Alaska, for special temporary duty.

Asst.-Surgeon F. J. Thornbury, relieved from duty at Chicago, and directed to proceed to Dutch Harbor, Alaska, and assume command of the service.

A. A. Surgeon Francis Duffy, granted leave of absence for two days from May 21.

A. A. Surgeon C. F. Ulrich, granted leave of absence for twelve days, from May 14.

Hospital Steward M. R. Mason, relieved from duty at San Francisco, Cal., and directed to proceed to Dutch Harbor, Alaska, and report to medical officer in command for duty.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ending May 17, 1901:

SMALLPOX—UNITED STATES AND INSULAR.

Arkansas: Prescott, May 8, 5 cases.
California: San Francisco, May 4-11, 3 cases.
Colorado: Forty counties, April 30, 430 cases.
Illinois: Chicago, May 4-11, 9 cases; Freeport, May 4-11, 2 cases.
Iowa: Clinton, May 4-11, 1 case.
Kentucky: Lexington, May 4-11, 8 cases.
Louisiana: New Orleans, May 4-11, 10 cases.
Massachusetts: Boston, May 9, 1 case; New Bedford, May 14, 1 case.
Michigan: Detroit, May 4-11, 1 case; Grand Rapids, April 29-May 11, 6 cases.
Nebraska: Omaha, May 4-11, 18 cases.
New Hampshire: Manchester, May 4-11, 8 cases.
New Jersey: Camden, May 4-11, 1 case; Newark, May 4-11, 3 cases.
New York: New York, May 4-11, 107 cases, 19 deaths.
Ohio: Cincinnati, May 3-10, 8 cases; Cleveland, May 4-11, 32 cases; Dayton, May 4-11, 1 case.
Pennsylvania: Philadelphia, May 4-11, 3 cases; Pittsburg, May 4-11, 7 cases.
Tennessee: Memphis, May 4-11, 27 cases, 2 deaths; Nashville, May 4-11, 8 cases.
Washington: Tacoma, April 27-May 4, 2 cases.
West Virginia: Huntington, April 13-May 11, 27 cases.
Wisconsin: Milwaukee, May 4-11, 1 case.
Porto Rico: Ponce, April 22-29, 3 cases.

SMALLPOX—FOREIGN.

China: Hongkong, March 23-April 6, 22 cases, 17 deaths.
Colombia: Panama, April 29-May 6, 4 cases, 1 death.
France: Paris, April 22-27, 20 deaths.
Germany: Bremen, April 13-20, 1 case.
Great Britain: England—Sheffield, April 13-20, 1 case. Scotland—Glasgow, April 26-May 3, 3 deaths.
India: Bombay, April 8-16, 6 deaths; Calcutta, March 23-April 13, 339 deaths; Karachi, April 7-14, 3 cases, 3 deaths; Madras, March 30-April 5, 5 deaths.
Italy: Naples, April 22-29, 149 cases, 30 deaths.
Russia: St. Petersburg, April 13-20, 13 cases, 1 death.

YELLOW FEVER.

Cuba: Havana, April 28-May 4, 1 case.

CHOLERA.

India: Bombay, April 8-16, 3 deaths; Calcutta, March 23-April 13, 194 deaths.

PLAGUE.

China: Lam Ko district, Feb. 14-March 26, 10,000 deaths.
India: Bombay, April 8-16, 681 deaths; Calcutta, March 23-30, 2557 deaths; Karachi, April 7-14, 229 cases, 214 deaths.
Japan: Nagasaki, April 19, 1 case, 1 death, on Japanese steamship Taichu Maru.